

**ORAL ARGUMENT HAS NOT BEEN SCHEDULED**

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**In the United States Court of Appeals  
for the District of Columbia Circuit**

**No. 16-1081**

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CITY OF BOSTON DELEGATION, *et al.*,  
*Petitioners*,  
v.

FEDERAL ENERGY REGULATORY COMMISSION,  
*Respondent*.

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ON PETITION FOR REVIEW OF ORDERS OF THE  
FEDERAL ENERGY REGULATORY COMMISSION

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**Consolidated Matters  
Nos. 16-1081, 16-1098  
and 16-1103**

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**JOINT APPENDIX - VOL I. of II**

**Record Documents**

**J.A. 1 - 1874**

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DATED: November 30, 2016

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June 18, 2013

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: Request for Approval of Pre-Filing Review  
Algonquin Gas Transmission, LLC–AIM Project  
Docket No. PF13-\_\_\_\_-000

Dear Ms. Bose:

Pursuant to Section 157.21(b) of the regulations of the Federal Energy Regulatory Commission ('FERC' or 'Commission'),<sup>1</sup> Algonquin Gas Transmission, LLC ('Algonquin') hereby requests approval from Commission Staff to initiate the Pre-Filing Review Process for the proposed Algonquin Incremental Market Project ('AIM Project' or 'Project'). Upon completion of the Pre-Filing Review, Algonquin will file an application with the Commission for authorization to construct the Project under Section 7(c) of the Natural Gas Act ('NGA').<sup>2</sup> Representatives of Algonquin met with Commission Staff on June 4, 2013 to discuss the Project and Algonquin's use of the Pre-Filing Review Process. This Project is designed to deliver critically needed natural gas supplies that will meet immediate and future supply and load growth requirements in the Northeast market area. The target in-service date for the AIM Project is November 1, 2016.

**Project Overview**

The AIM Project will create additional firm pipeline capacity necessary to deliver 433,000 dekatherms per day ('Dth/d') of natural gas to the Northeast market area. The Project will create additional capacity between a receipt point at Ramapo in Rockland County, NY and Algonquin city gate delivery points.

Algonquin held an open season for the AIM Project from September 20, 2012 through November 2, 2012 ('2012 Open Season'). A supplemental open season and a reverse open season will be held concurrently by Algonquin from June 11, 2013 through June 25, 2013 to allow for potential shippers to bid for the remaining project capacity and allow Algonquin to consider the turnback of capacity by current firm shippers to reduce the scope of Algonquin's facility requirements for the AIM Project. As a result of the 2012 Open Season, Algonquin has executed precedent agreements with four (4) shippers for service on the Project facilities. The shippers, Yankee Gas Services Company, NSTAR Gas Company, Connecticut Natural Gas and Southern

<sup>1</sup> 18 C.F.R. § 157.21(b) (2013).

<sup>2</sup> 15 U.S.C. §§ 717f(b) and 717f(c) (2006).

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Connecticut Gas collectively, the (Project Shippers), have entered into commitments for firm transportation service. Placing the Project facilities in service by November 1, 2016 will allow the Project Shippers to receive service by the timing contemplated in the precedent agreements for the Project.

Demand for natural gas is growing in the Northeast as the region seeks to grow its economy by using an economic source of fuel that is domestically produced, clean burning and efficient. Demand in the region is expected to continue to increase as more homes convert home heating units and appliances to natural gas and as natural gas utilization increases for electric generation.

In recognition of this opportunity The Connecticut Department of Energy and Environmental Protection recently issued a Comprehensive Energy Strategy (‘CES’) that includes specific recommendations for increasing the use of natural gas in Connecticut. The CES notes that “only 31% of Connecticut homes heat with gas today” and “proposes to make gas available to as many as 300,000 additional Connecticut homes and businesses.” Similar to Connecticut, less than 50% of the homes in Rhode Island and Massachusetts utilize natural gas for home heating. Converting home heating units and other appliances to natural gas represents a substantial source of growth in the region, and capacity commitments by local distribution companies (‘LDCs’) in the AIM Project confirms the need for new pipeline infrastructure to support this growth. The current project shippers are all LDCs. While natural gas is becoming an increasingly important fuel for electric generation in the region, to date no commitment by the electric market has been made to the AIM project. However, Algonquin will be holding a supplemental open season this month to allow bids for the remaining AIM capacity from any interested parties, including electric market participants. To the extent additional market support is not identified by August, 2013, Algonquin will revise its facility requirements to bring them into alignment with the identified level of market support.

Algonquin respectfully requests that the Commission approve this request by June 26, 2013, to initiate the Pre-Filing Review Process. As demonstrated herein, Algonquin has engaged in extensive efforts in anticipation of filing its certificate application to ensure that the Project adheres to the timeline discussed below and meets the November 1, 2016 target in-service date. To further support its request, Algonquin submits the following in compliance with the Commission’s regulations in Section 157.21(d) and Commission Staff’s guidance for initiating the Pre-Filing Review Process.

***1. A description of the schedule desired for the project including the expected application filing date and the desired date for Commission approval.***

To meet the target in-service date of November 1, 2016 for the Project, Algonquin requests that the Director of the Office of Energy Projects issue a notice approving use of the Pre-Filing Review Process by June 26, 2013. Algonquin intends to submit an initial draft of Environmental Resource Report No. 1 and a draft alternatives analysis 30 days after the Pre-Filing docket number being issued, and a draft of all Environmental Resource Reports no later than October 25, 2013. Algonquin plans to request receipt of Commission Staff’s comments on those draft Environmental Resource Reports no later than December 20, 2013. Algonquin anticipates submitting the certificate application for the Project no later than February, 2014.



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Algonquin is committed to addressing environmental and landowner concerns as part of the Pre-Filing Review Process and requests issuance of a final environmental document no later than November 1, 2014 and a certificate order no later than January 31, 2015.

Adhering to this timeline will allow for receipt of any remaining applicable permits and authorizations necessary for Algonquin to begin pre-construction activities, including the orderly mobilization of contractors and materials and the resolution of any outstanding landowner issues, and allow for construction during the traditional construction season (March-October), starting with the initial stages of construction in March 2015. Timely commencement of these activities in early 2015 is critical to ensure the Project facilities are placed into service by November 1, 2016.

***2. Explain why the project sponsor needs/wants to participate in the pre-filing process.***

Algonquin is seeking authorization to use the Pre-Filing Review Process to provide the necessary environmental information to Commission Staff for review at the earliest practicable time in order to expedite the processing of Algonquin's certificate application.

Use of the Pre-Filing Review Process will benefit Algonquin, interested federal, state, and local agencies, and other stakeholders by:

- Assisting in the development of initial information about the Project and identifying affected parties;
- Facilitating issue identification and resolution;
- Providing a process that accommodates site visits, meetings with federal, state, and local agencies and stakeholders, participation in public information meetings (e.g., open houses), and the examination of alternatives;
- Providing interested federal, state, and local agencies and stakeholders with access to draft Environmental Resource Reports and other Project-related information;
- Minimizing the number of Commission Staff environmental data requests and subsequent filings;
- Maintaining a coordinated schedule for a thorough environmental impact review; and
- Facilitating preparation of Environmental Resource Reports and other related documents.

***3. Provide a detailed description of the project, including location maps and plot plans to scale showing all major plant components.***

The Project will consist of the following facilities:

- (i) Construction of approximately 25.5 miles of mainline pipeline, comprised of the following:
  - a. 3.3 miles removal and replacement of 26-inch pipeline with 42-inch pipeline in Rockland County, New York upstream of Algonquin's existing Stony Point Compressor Station;
  - b. 15.8 miles removal and replacement of 26-inch pipeline with 42-inch pipeline (including a new 1.1 mile 42-inch Hudson River crossing) in Rockland

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- County, New York and Westchester County, New York downstream of Algonquin's existing Stony Point Compressor Station;
  - c. 4.4 miles removal and replacement of 26-inch pipeline with 42-inch pipeline in Putnam County, New York and Fairfield County, Connecticut downstream of Algonquin's existing Southeast Compressor Station; and
  - d. 2.0 miles 36-inch pipeline loop extension in Middlesex County, Connecticut and Hartford County, Connecticut downstream of Algonquin's existing Cromwell Compressor Station.
- (ii) Construction of approximately 18.0 miles of lateral pipeline, comprised of:
- a. 9.1 miles removal and replacement of 6-inch pipeline with 16-inch pipeline on Algonquin's existing E-1 System in New London County, Connecticut;
  - b. 2.4 miles 12-inch pipeline loop on Algonquin's existing E-1 System in New London County, Connecticut;
  - c. 1.6 miles of 12-inch pipeline loop on Algonquin's existing G-2 System in Newport County, Rhode Island; and
  - d. 4.9 miles of new 16-inch pipeline off of Algonquin's existing I-4 System in Norfolk County, Massachusetts and Suffolk County, Massachusetts.
- (iii) Construction at six existing Algonquin Compressor Stations for an additional 79,780 horsepower (hp), comprised of the following:
- a. Install one (1) Solar Mars 100 (15,900 hp) gas-fired compressor unit and one (1) Solar Centaur 50 (6,300 hp) gas-fired compressor unit at Algonquin's existing Stony Point Compressor Station in Rockland County, New York;
  - b. Restage two (2) existing Solar Taurus 60 (7,700 hp) gas-fired units (C5 and C6) at Algonquin's existing Stony Point Compressor Station in Rockland County, New York;
  - c. Upgrade one (1) existing Solar Mars 90 (12,600) hp gas-fired compressor unit (C7) to 15 NO<sub>x</sub> parts per million (ppm) resulting in a 13,220 hp unit (additional 620 hp) at Algonquin's existing Stony Point Compressor Station in Rockland County, New York;
  - d. Install one (1) Solar Mars 90 (13,220 hp) gas-fired compressor unit at Algonquin's existing Southeast Compressor Station in Putnam County, New York;
  - e. Restage one (1) existing Solar Taurus 60 (7,700 hp) gas-fired unit (C5) and one (1) existing Solar Taurus 70 (10,915 hp) gas-fired unit (C4) at Algonquin's existing Southeast Compressor Station in Putnam County, New York;
  - f. Replace compressor body and upgrade one (1) existing Solar Mars 90 (12,600 hp) gas-fired compressor unit (C3) to 15 NO<sub>x</sub> ppm resulting in a 13,220 hp unit (additional 620 hp) at Algonquin's existing Southeast Compressor Station in Putnam County, New York;
  - g. Install one (1) Solar Centaur 50 (6,300 hp) gas-fired compressor unit at Algonquin's existing Oxford Compressor Station in New Haven County, Connecticut;

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- h. Install one (1) Solar Mars 100 (15,900 hp) gas-fired compressor unit at Algonquin's existing Cromwell Compressor Station in Middlesex County, Connecticut;
- i. Install one (1) Solar Taurus 60 (7,700 hp) gas-fired compressor unit at Algonquin's existing Chaplin Compressor Station in Windham County, Connecticut; and
- j. Install one (1) Solar Mars 90 (13,220 hp) gas-fired compressor unit at Algonquin's existing Burrillville Compressor Station in Providence County, Rhode Island.

(iv) Construction at Algonquin meter stations, comprised of the following:

- a. Install over pressure protection ("OPP") at 5 existing meter stations;
- b. Construct 3 new meter stations; and
- c. Additional capacity required for 25 existing meter stations.

Please see Attachment 1 for USGS Quadrangle maps depicting the location of Project facilities. The attached maps identify the currently preferred route, which incorporates information gathered during document reviews, field work, and consultation and feedback from impacted landowners, agencies, government officials, and other interested stakeholders. These outreach efforts are documented in attachments discussed further in this letter.

In accordance with the Pre-Filing Review Process, Algonquin is committed to continuing review of the route alignment with stakeholders and working to accommodate their concerns. As Algonquin continues these ongoing efforts to refine the route alignment, updates to the maps will be submitted to Commission Staff.

***4. Provide a list of the relevant federal and state agencies in the project area with permitting requirements. The filing shall include a statement indicating: (i) that those agencies are aware of the prospective applicant's intention to use the pre-filing process; (ii) whether the agencies have agreed to participate in the process; (iii) how the applicant has accounted for agency schedules for issuance of federal authorizations; and (iv) when the applicant proposes to file with these agencies for their respective permits or other authorizations.***

Algonquin began contacting federal and state regulatory agencies in New York, Connecticut, Rhode Island and Massachusetts in May 2013 to discuss the relevant permitting requirements for the AIM Project. Algonquin provided preliminary information regarding the Project, including a Project description and USGS 7.5-minute quadrangles, and advised these agencies of Algonquin's intent to use the Pre-Filing Review Process. A listing of the federal and state agencies that Algonquin has contacted to date is included as Attachment 2. Included, as Attachment 3, is a list of anticipated environmental permits, reviews, and consultations.

Agencies contacted to date have requested additional information prior to committing to participate in the Pre-Filing Review Process. As Algonquin continues its outreach efforts and participates in meetings with the key permitting agencies anticipated in June 2013, Algonquin will request that each federal and state agency agree to participate in the Pre-Filing Review Process and will report that information to the Commission as it becomes available. Algonquin expects to file for the federal and the majority of the state authorizations at the same time as or

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prior to submitting its certificate application to the Commission, consistent with Order No. 687,<sup>3</sup> and Algonquin will work with Commission Staff and the affected federal and state agencies to develop a schedule for issuance of applicable environmental clearances and approvals. Algonquin will continue its efforts to contact federal and state agency representatives during the Pre-Filing Review Process and will submit updates to Attachments 2 and 3 to Commission Staff accordingly.

***5. Detail other interested persons and organizations that have been contacted about the project.***

Algonquin began advising potential stakeholders, government officials, and other interested persons in February 2013 about the AIM Project through letters and individual meetings. Algonquin has contacted officials at the federal, state, and local governments, including congressional delegations, state legislators, county commissioners, and local elected officials.

A listing of government officials is included as Attachment 4. Algonquin will continue its ongoing efforts to identify and contact other potential stakeholders and interested persons, updates to Attachment 4 will be submitted to Commission Staff accordingly.

***6. Detail what work has been done already, i.e. landowner contacts, agency consultations, engineering and route planning.***

*Landowner contacts:* The proposed Project facilities will affect limited portions of Rockland, Putnam and Westchester Counties, New York; New Haven, Windham, Fairfield, Middlesex, Hartford, Tolland and New London Counties, Connecticut; Providence and Newport Counties, Rhode Island; and Norfolk, Bristol, Middlesex, Plymouth and Suffolk County, Massachusetts. The proposed Project will directly affect approximately 462 landowners or 572 tracts along the pipeline portion. To date, these landowners have been contacted multiple times by Algonquin. These communications have included a Project introduction, a letter requesting survey permission, individual discussions with Algonquin's representatives, and site visits. To date, Algonquin has been granted survey permission on 763 tracts which constitutes 86 percent of the proposed Project right-of-way for which Algonquin needs survey authorization. There were seventy-six (76) abutters to Algonquin's six (6) Compressor Stations proposed for modifications that received Project notifications but were not asked for survey permission because there were no Project survey activities being planned at those facilities. Initial field surveys are in-progress and are scheduled to be completed in September, 2013.

In April and May 2013, Algonquin hosted twelve (12) landowner informational meetings for affected landowners in the Pomona, Stony Point, Shenorock, Yorktown Heights, Bear Mountain and Cortlandt Manor areas of New York; the Lebanon, Cromwell, Southbury and Danbury areas of Connecticut; and the Harrisville and Little Compton areas of Rhode Island. Additional landowner informational meetings will be conducted in July-August 2013 timeframe.

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<sup>3</sup> *Regulations Implementing the Energy Policy Act of 2005; Coordinating the Processing of Federal Authorizations for Applications under Sections 3 and 7 of the Natural Gas Act and Maintaining a Complete Consolidated Record*, 117 FERC ¶ 61,076 (2006) ("Order No. 687").

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Impacted landowners and abutters were mailed notices inviting them to attend the respective meetings. The meetings were set up as open houses with subject matter experts available for construction, environmental, regulatory, government relations, stakeholder outreach and right-of-way. Alignment sheets identifying impacted tracts by landowner were available to allow for site specific discussions between right-of-way agents and interested stakeholders. Attendees asked various questions about the Project scope, schedule, noise, and safety as well as tract specific questions concerning Project impacts.

*Agency consultations:* Algonquin initiated consultation with the applicable federal and state resource and permitting agencies on May 17, 2013. Included in the outreach were the United States Army Corps of Engineers ('USACE') (New England and New York Districts), the United States Fish & Wildlife Service ('USFWS') (New York Field Office and New England Field Office), the National Marine Fisheries Service ('NMFS') Northeast Regional Office, the New York State Department of Environmental Conservation ('NYSDEC'), the Connecticut Department of Energy and Environmental Protection ('CTDEEP'), the Rhode Island Department of Environmental Management ('RIDEM'), the Massachusetts Executive Office of Energy and Environmental Affairs ('EOEA'), and the Massachusetts Department of Environmental Protection ('MassDEP').

*Project Engineering and Route Planning:* Algonquin has defined the facilities required to provide the transportation services associated with the Project Shippers' commitments. The facilities primarily involve pipeline looping generally adjacent to existing pipeline, therefore minimal route planning was required. Further, all of the new compression and other compressor station modifications and minor facility modifications for the required uprates will be within the fence line of existing facilities, with the possible exception of additional temporary workspace needed during construction. Civil surveys commenced on April, 2013 and are ongoing. Right-of-way workspace configurations will be further refined, as necessary, based on input from landowners, agencies, public officials and other stakeholders, as well as information obtained from field surveys. These activities will continue throughout the Pre-Filing Review Process.

*Contractor Engagement:* Algonquin and its in-house engineering group have been working with the following contractors to perform various engineering and project studies:

- Hatch Mott MacDonald: Complete civil survey and assist Algonquin with project design and engineering;
- TRC Environmental ('TRC'): Prepare Environmental Resource Reports and obtain environmental permits & clearances;
- Public Archaeological Laboratory ('PAL'): Prepare cultural resource reports and obtain Project clearances;
- Trinity Consultants: Prepare air quality permit applications; and
- Hoover & Keith: Prepare noise section of Environmental Resource Report No. 9.

*Environmental and Cultural Surveys:* The wetland delineation and cultural resources field surveys for the Project commenced in April, 2013.

Ms. Kimberly D. Bose, Secretary

June 18, 2013

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Algonquin has initiated informal consultations with federal and state agencies. Certain federal and state-listed species have been identified as potentially occurring in the vicinity of the Project facilities, including:

- Indiana bat (endangered)—New York and Connecticut;
- New England Cottontail Rabbit (candidate)—New York;
- Bog-turtle (endangered)—New York and Connecticut; and
- Short-nosed Sturgeon and Atlantic Sturgeon (endangered)—Hudson River, New York.

Algonquin will continue to consult with federal and state agencies on any required species-specific biological surveys for the Project.

*Next Steps:* Upon approval from the Commission to use the Pre-Filing Review Process, Algonquin will distribute letters to stakeholders that will include information about the FERC Pre-Filing Review Process as well as a detailed description of Project facilities and maps (*i.e.*, USGS 7.5-minute quad based figures), similar to the information provided to the governmental agencies described in response to Item 4. Algonquin will continue to update stakeholders with mailers and will also post information on its company website at [www.spectraenergy.com](http://www.spectraenergy.com) under ‘New Projects and Our Growth Process—New Project in U.S.’

***7. Propose at least three prospective third-party contractors from which the Commission Staff may make a selection to assist in the preparation the requisite NEPA document, or a proposal for the submission of an applicant-prepared draft Environmental Assessment as determined during the initial consultation.***

Algonquin prepared a Request for Proposal (‘RFP’) for a third party contractor to prepare environmental documents. The draft RFP was reviewed by FERC Staff and issued to five prospective contractors. While three firms were unable to participate in the RFP process due to conflicts, two firms submitted proposals on June 18, 2013. Algonquin has provided herewith in Attachment 5 the two contractor proposals to the Commission for its consideration.

***8. Acknowledge that a complete Environmental Report and complete application are still required at the time of filing.***

Algonquin acknowledges that a complete Environmental Report and a complete application under Section 7 of the NGA are still required for the Project and will be submitted to the Commission.

***9. Detail a Public Participation Plan, which identifies specific tools and actions to facilitate stakeholder communications and public information, including establishing a project website and a single point of contact.***

Algonquin has developed a comprehensive Public and Agency Participation Plan that outlines a commitment to engage actively with stakeholders throughout the life cycle of the Project and provides the steps Algonquin has identified to ensure successful ongoing communication with stakeholders, including establishing a Project website and a single point of

***9. Detail a Public Participation Plan, which identifies specific tools and actions to facilitate stakeholder communications and public information, including establishing a project website and a single point of contact.***

Algonquin has developed a comprehensive Public and Agency Participation Plan that outlines a commitment to engage actively with stakeholders throughout the life cycle of the Project and provides the steps Algonquin has identified to ensure successful ongoing communication with stakeholders, including establishing a Project website and a single point of contact. Algonquin will continue to meet with Project stakeholders to discuss the ongoing efforts associated with the Project.

The Executive Summary to Algonquin's Public and Agency Participation Plan is included as Attachment 6. Additional details regarding the Public and Agency Participation Plan will be provided in future filings.

In conclusion, Algonquin believes use of the Pre-Filing Review Process will allow for active participation by interested stakeholders early on in the Project development process while maintaining a coordinated schedule throughout the review process. Algonquin is committed to identifying and resolving stakeholder issues or concerns regarding the proposed AIM Project at the earliest practicable stage of the Project.

Algonquin appreciates the assistance of Commission Staff in initiating the Pre-Filing Review Process and ensuring a thorough and timely analysis of the AIM Project, thereby allowing Algonquin to meet the service needs and timing requirements of the Project Shippers.

Should you have any questions concerning this request, please contact me at (713) 627-4488 or Chris Harvey at (713) 627-5113.

Sincerely,



Berk Donaldson  
Regulatory Affairs  
Director, Rates and Certificates

cc: Lauren O'Donnell (letter only)  
Mike McGehee (letter only)  
John Wood (letter only)  
Doug Sipe  
Maggie Suter

## **Attachment 1**

### Project Overview Map AIM Project Quads



## **Attachment 2**

### Environmental Agency Contacts

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<b>FEDERAL</b>		
<b>U.S. Army Corps of Engineers (USACE) New England District – Regulatory Division</b> 696 Virginia Road Concord, MA 01742 Phone: 978-318-8059  Jennifer McCarthy, Chief, Regulatory Division, Phone: 978-318-8330	<b>Required Permits</b> <ul style="list-style-type: none"> <li>Section 10 Rivers and Harbors Act</li> <li>Section 404 Clean Water Act (CWA)</li> </ul>	May 22, 2013 – Called Karen Adams and left her a call back message.  May 24, 2013 – Followed up with Karen Adams and sent her preliminary high-level mapping. Karen agreed to coordinate with the NY District and will get back to me regarding potential meeting dates.
<b>USACE New York District – Regulatory Division</b> Jacob K. Javits Federal Building 26 Federal Plaza, Room 2109 New York, NY 10278-0090  Steve Ryba, Section Chief, Regulatory Branch Phone: 917-790-8420	<b>Required Permits</b> <ul style="list-style-type: none"> <li>Section 10 Rivers and Harbors Act</li> <li>Section 404 Clean Water Act</li> </ul>	May 22, 2013 – Called Steve Ryba and left him a message to call back. Karen Adams from New England District is coordinating with NY District on permit approach regarding lead District and potential meeting dates.
<b>U.S. Environmental Protection Agency (USEPA) Region 1</b> 5 Post Office Square, Suite 100 Boston, MA 02109-3912 Phone: 617-918-1302  Timothy Timmerman, Region 1 Associate Director, Office of Environmental Review (NEPA) Phone: 617-918-1025 Email: <a href="mailto:timmermann.timothy@epa.gov">timmermann.timothy@epa.gov</a>  Anne Arnold, Manager, Air Program Branch Phone: 617-918-0047 Email: <a href="mailto:arnold.anne@epa.gov">arnold.anne@epa.gov</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Consultation through the USACE Section 404 of the CWA process</li> <li>Consultation during NEPA review and oversight of air permits</li> <li>Spill Prevention, Control and Countermeasures (SPCC) Plan</li> </ul>	May 28, 2013 – Left message.
<b>USEPA Region 2</b> 290 Broadway New York, NY 10007-1866  Lingard Knutson, Region 2 Prime Contact (NEPA) Phone: 212-637-3747 Email: <a href="mailto:Knutson.lingard@epamail.epa.gov">Knutson.lingard@epamail.epa.gov</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Consultation through the USACE Section 404 of the CWA process</li> <li>Consultation during NEPA review and oversight of air permits</li> <li>Spill Prevention, Control and Countermeasures (SPCC) Plan</li> </ul>	May 20, 2013 - Contact made to Lingard Knutson who confirmed she would be the EPA Region 2 contact.
<b>National Marine Fisheries Service (NOAA Fisheries)</b> NMFS Northeast Regional Office 55 Great Republic Drive Gloucester, MA 01930-9300  Mary Colligan, Assistant Regional Administrator, Protected Resources Division	<b>Consultation</b> <ul style="list-style-type: none"> <li>Consultation under section 7(a)(2) of the Endangered Species Act (ESA) the Magnuson-Stevens Fishery Conservation and Management Act; and the Marine Mammal Protection Act.</li> </ul>	May 20, 2013 – Consultation letter sent.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
Phone: (978) 281-9300 E-mail: <a href="mailto:Mary.A.Colligan@noaa.gov">Mary.A.Colligan@noaa.gov</a>		
<b>U.S. Fish and Wildlife Service (USFWS)</b> New England Field Office 70 Commercial Street, Suite 300 Concord, NH 03301-5087  Tom Chapman Phone: (603) 223-2541 Emails: <a href="mailto:Tom_Chapman@fws.gov">Tom_Chapman@fws.gov</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Consultation under Section 7 of the ESA; the Migratory Bird Treaty Act; and the Fish and Wildlife Coordination Act (16 USC §§ 1531 et seq.)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>USFWS</b> New York Field Office 3817 Luker Road, Cortland, NY 13045 Phone: 607-753-9334  Robyn Niver Phone: 609-383-3938	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding threatened and endangered species that are federally listed under the Endangered Species Act.</li> <li>Consider impacts on any activity involving removal of nests of any species of bird protected under the Migratory Bird Treaty Act.</li> <li>Review and consultation regarding essential fish habitat (if applicable, in conjunction with the National Marine Fisheries Service).</li> </ul>	May 20, 2013 – Consultation letter sent.
<b>STATE OF NEW YORK</b>		
<b>New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Permits</b> 625 Broadway - 4 <sup>th</sup> Floor Albany, NY 12233  Jack Nasca, Director Phone: 518-402-9180  <b>John J. Ferguson</b> , Deputy Permit Administrator Phone: 518-402-9167  Chris Hogan, Project Manager Phone: 518-402-9151	<b>Required Permits</b> <ul style="list-style-type: none"> <li>Water Quality Certification pursuant to Section 401 of the CWA (6 NYCRR 608). Section 401 Water Quality Certification will include the following:               <ul style="list-style-type: none"> <li>Freshwater Wetland Permit (6 NYCRR Parts 663, 664, 665)</li> <li>Tidal Wetland Permit (6 NYCRR Part 661)</li> <li>State Pollution Discharge Elimination System (SPDES) Hydrostatic Test Water</li> <li>Protection of Waters Permit (Article 15, Title 5; Part 608)</li> </ul> </li> </ul>	May 20, 2013 – Contact made to Chris Hogan of NYSDEC. Chris Hogan confirmed that he will be the project manager and that all permitting coordination needs to flow through Albany.
<b>NYSDEC, Division of Water Bureau of Water Permits</b> 625 Broadway 4th Floor, Albany NY 12233-1750  David Gasper, P.E. SPDES Permits Phone: 518-402-8114	<b>Required Permits</b> <ul style="list-style-type: none"> <li>SPDES Construction Stormwater General Permit</li> </ul>	Contact will be coordinated through meeting to be scheduled by Chris Hogan in June.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
e-mail: <a href="mailto:djgasper@gw.dec.state.ny.us">djgasper@gw.dec.state.ny.us</a>		
<b>NYSDEC, Division of Fish, Wildlife, &amp; Marine Services</b> <b>New York Natural Heritage Program</b> 625 Broadway, 5th Floor Albany, NY 12233-4757  Ms. Tara Seoane, Information Services Phone: 518-402-8935 Fax: 518-402-8925	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding threatened and endangered species that are state-listed under the ESA</li> </ul>	May 20, 2013 – Consultation letter sent.
<b>NYSDEC, Division of Fish, Wildlife, &amp; Marine Services</b> <b>Bureau of Marine Resources</b> 205 North Belle Mead Road, Suite 1 East Setauket, New York 11733  Karen Chytalo, Section Chief, Marine Habitat Protection Phone: 631-444-0430	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding threatened and endangered species that are state-listed under the ESA</li> </ul>	Contact will be coordinated after meeting with Chris Hogan in June.
<b>NYSDEC, Division of Fish, Wildlife, &amp; Marine Services</b> <b>Bureau of Wildlife</b> 625 Broadway Albany, NY 12233-4754  Robert Sandford, Section Chief, Wildlife Planning and Coord. Phone: 518-402-8883	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding threatened and endangered species that are state-listed under the ESA.</li> </ul>	Contact will be coordinated after meeting with Chris Hogan in June.
<b>NYSDEC, Division of Fish, Wildlife, &amp; Marine Services</b> <b>Bureau of Fisheries</b> 625 Broadway Albany, NY 12233-4753 Phone: 518-402-8920	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding fisheries species</li> </ul>	Contact will be coordinated after meeting with Chris Hogan in June.
<b>NYSDEC, Division of Air Resources, Bureau of Stationary Sources</b> 625 Broadway Albany, NY 12233-3254 Phone: 518-402-8403  Mike Cronin, Albany Office Steve Yarrington, Albany Office Margaret Valis (air modeler) Albany Office  George Sweikert, DEC Region 3 21 South Putt Corners Rd. New Paltz, NY 12561 Phone: 845-256-3045  Denny Escapata, DEC Region 3 Permit Engineer DEC Region 3 Sub-Office 100 Hillside Avenue, Suite 1W	<b>Consultation</b> <ul style="list-style-type: none"> <li>Parts 201/231 air construction permit and Title V permit modification</li> </ul>	Meeting held at New Paltz on May 16, 2013. Conference call scheduled for May 29, 2013.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
White Plains, NY 10603-2860 Phone: 914-428-2505, x 371		
<b>New York State Department of State (NYSDOS)</b>  <b>Consistency Review Unit</b> <b>Office of Communities &amp; Waterfronts</b> One Commerce Place, Suite 1010 99 Washington Ave Albany, NY 12231-0001  Matthew Maraglio, Coastal Resource Specialist Phone: 518-474-5290 Email: <a href="mailto:matthew.maraglio@dos.state.ny.us">matthew.maraglio@dos.state.ny.us</a>	<b>Required Permits</b> <ul style="list-style-type: none"> <li>Coastal Zone Consistency Review</li> </ul>	May 22, 2013 – Contact made with Matthew Maraglio, Coastal Resource Specialist. Matt will be the lead for CZMA issues and will participate in NYSDEC meeting to be coordinated by Chris Hogan.
<b>New York State Office of General Services</b> <b>Real Estate Development - Land Management</b> Corning Tower, 26th floor Empire State Plaza Albany, New York 12242-0001  John Hernick, Land Surveyor Phone: 518-474-2195	<b>Required Permits</b> <ul style="list-style-type: none"> <li>Application for use of land underwater, pursuant to Article 2, Section 3, Subdivision 2 of the Public Lands Law</li> <li>Notice of geotechnical work at least two weeks in advance (letter must include proposed sampling locations and schedule)</li> </ul>	May 20, 2013 – Contact made with John Hernick of NYSOGS.
<b>New York State Historic Preservation Office, NYS Office of Parks Recreation and Historic Preservation, Historic Preservation Field Services Bureau</b>  NY State Historic Preservation Peebles Island Resource Center P.O. Box 189 Waterford, NY 12188-0189  Ruth Pierpont, Director Phone: 518-237-8643 ext. 3269 E-mail: <a href="mailto:ruth.pierpont@oprhp.state.ny.us">ruth.pierpont@oprhp.state.ny.us</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding Section 106, National Historic Preservation Act</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>New York State Office of Parks, Recreation and Historic Preservation</b> Empire State Plaza Agency Building 1 Albany, NY 12238-0001  Mailing Address: NYS Office of Parks, Recreation and Historical Preservation 625 Broadway Albany, NY 12238  Tom Alworth, Deputy Commissioner for Natural Resources	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation regarding for potential encroachment across state lands</li> </ul>	May 17, 2013 – Consultation letter sent. Gov't Relations will take lead on reaching out to State Parks.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
625 Broadway Albany, NY 12207 Phone: 518-474-0414  Jeff Meyers, Esq. Phone: 518-486-2921 E-mail: <a href="mailto:jeffrey.meyers@oprhp.state.ny.us">jeffrey.meyers@oprhp.state.ny.us</a>		
<b>County of Westchester, New York</b>  Westchester County Department of Planning 148 Martine Avenue, Room 432 White Plains, NY 10601-4704  Main Office (914) 995-4400	<b>Consultation:</b> <ul style="list-style-type: none"> <li>Blue Mountain Reservation</li> <li>North County Trailway</li> </ul>	Consultation initiated by Algonquin Right-of-Way Department
<b>New York City (NYC) Department Environmental Protection</b> Bureau of Water Supply Watershed Protection Programs Regulatory Review & Engineering  465 Columbus Avenue Valhalla, NY 10595  Matt Gianetta, Stormwater Supervisor 914-742-2028  Gail Piranio, Project Manager <a href="mailto:gpiranio@dep.nyc.gov">gpiranio@dep.nyc.gov</a> 914-773-4408  Melissa Layman <a href="mailto:mhamilton@dep.nyc.gov">mhamilton@dep.nyc.gov</a> 914-742-2013	<b>Required Permits</b> <ul style="list-style-type: none"> <li>Stormwater Pollution Prevention Plan</li> <li>Erosion and Sediment Control</li> </ul>	Consultation initiated by Algonquin Right-of-Way Department
<b>Howard T. Phillips Jr., Supervisor</b> Town of Haverstraw Haverstraw Town Hall One Rosman Road Garnerville, NY 10923	<b>Consultation:</b> <ul style="list-style-type: none"> <li>Cheescote Park</li> </ul>	Consultation initiated by Algonquin Right-of-Way Department
<b>STATE OF CONNECTICUT</b>		
<b>Connecticut Department of Energy and Environmental Protection (CTDEEP)</b> <b>Bureau of Water Protection and Land Reuse</b> 79 Elm Street Hartford, CT 06106-5127  Fred Riese, Senior Environmental Analyst Phone: (860) 424-4110  Cheryl Chase, Director Inland Water Resources Division	<b>Required Permit</b> <ul style="list-style-type: none"> <li>Water Quality Certification</li> <li>Inland Wetlands and Watercourses (sections 22a-36 through 22a-45 of the CGS).</li> <li>Water Diversion Protection of Waters Permit- water withdrawal non consumptive use (section 22a-365 through 22a-379 of the CGS).</li> <li>Stream Encroachment Lines (sections 22a-342 through 22a-349a CGS).</li> </ul>	May 22, 2013 – Contact made with Fred Riese.  May 24, 2013 – Followed up with Fred Riese and sent him preliminary high-level mapping. Fred agreed to coordinate with the other CTDEEP agencies and will get back to me regarding potential meeting dates.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
Phone: 860-424-3853	<ul style="list-style-type: none"> <li>Flood Management Certification (sections 25-68b through 25-68h).</li> <li>General Permit for discharges of hydrostatic water from new tanks and pipelines to waters of the U.S. (section 22a-430b of the CGS).</li> <li>Stormwater and Dewatering Wastewaters from Construction Activities (section 22a-430b of the CGS).</li> </ul>	
<b>Connecticut Department of Energy and Environmental Protection (CTDEEP)</b> <b>Engineering &amp; Enforcement Section</b>  <b>Bureau of Air Management</b> 79 Elm Street Hartford, CT 06106-5127  Gary Rose, Division Director Phone: (860) 424-3468 gary.rose@ct.gov  Richard A., Pirolli, Phone: (860) 424-3450 ric.pirolli@ct.gov	<b>Consultation:</b> <ul style="list-style-type: none"> <li>Minor or Non-Minor Modification of Title V Permit for Chaplin and Cromwell (RCSA section 22a-174-2a).</li> <li>Oxford Minor NSR air permit. Modification or registration for GPLPE (Section 22a-174c of the CGS, RCSA section 22a-174-2a).</li> </ul>	Meeting with air bureau will be coordinated with other CTDEEP Bureaus as noted above.
<b>Connecticut Department of Energy and Environmental Protection (CTDEEP)</b> <b>Bureau of Natural Resources</b> 79 Elm Street, 6 <sup>th</sup> Floor Hartford, CT 06106-5127 William Hyatt, Bureau Chief  Wildlife Division Richard Jacobson, Director Phone: 860-424-3592  Marine Fisheries Division David Simpson, Director  Inland Fisheries Division Peter Aarrestad, Director  Forestry Division Christopher Martin, Director	<b>Consultation</b> <ul style="list-style-type: none"> <li>State-listed threatened and endangered species consultations</li> <li>Warmwater/coldwater fisheries</li> <li>Marine fisheries</li> </ul>	Coordination will be determined with other CTDEEP Bureaus as noted above.
<b>Connecticut Siting Council</b> Ten Franklin Square New Britain, CT 06051  Melanie Bachman Acting, Executive Director	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and certification of energy facilities through the FERC process.</li> </ul>	May 20, 2013 – Contact made with Melanie Bachman (Staff Attorney & Acting Executive Director).

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
860-827-2935		
<b>CTDEEP Wildlife Division - Natural Diversity Data Base</b> 79 Elm Street, 6 <sup>th</sup> Floor Hartford, CT 06106-5127  Dawn McKay Phone: 860-424-3592	<b>Consultation</b> <ul style="list-style-type: none"> <li>State-listed threatened and endangered species consultations</li> </ul>	May 20, 2013 – Consultation letter sent.
<b>Connecticut Office of the State Archaeologist</b>  <b>Connecticut Archaeology Center</b> 2019 Hillside Road, Unit 1023 Storrs, CT 06269-1023  Dr. Nicholas Bellantoni Phone: 860-486-5248	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act (16 USC § 470(f)).</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Connecticut State Historic Preservation Office</b> Department of Economic and Community Development One Constitution Plaza Second Floor Hartford, CT 06103  Stacy Vairo Deputy State Historic Preservation Officer Phone: 860-256-2727	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>MUNICIPALITIES of CONNECTICUT</b>		
<b>Berlin Inland Wetland and Watercourse Commission</b> Berlin Town Hall 240 Kensington Road Berlin, CT 06037  James P. Horbal Wetlands Agent/Deputy Director of Public Works Phone 860-828-7069 Fax: 860-828-7180 Jhorbal@town.berlin.ct.us	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45a of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Chaplin Wetlands and Watercourses Commission</b> 495 Phoenixville Road PO Box 286 Chaplin, CT 06235  Joseph R. Theroux, Wetlands Agent Phone 860-376-6842 Fax: 860-455-0073 x3160027	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.



AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
Joetheroux426@comcast.net		
<b>Cromwell Inland Wetlands and Watercourse Agency</b> Cromwell Town Hall 41 West Street Cromwell, CT 06416  Fred Curtin Zoning & Wetlands Compliance Officer Phone: 860-632-3422 Fax: 860-632-3477 fcurtin@cromwellct.com	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Danbury Inland Wetlands and Watercourse Agency</b> 155 Deer Hill Danbury, CT 06810  Daniel L. Baroody, Senior Inspector Environmental Impact Commission Phone: 203-797-4625 Fax: 203-796-1596 d.baroody@ci.danbury.ct.us	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Farmington Inland Wetlands and Watercourses Agency</b> 1 Monteith Drive Farmington, CT 06032-1053  Jeffrey Ollendorf, Town Planner 860-675-2325 Fax: 860-2319 ollendorf@farmington-ct.org	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Franklin Inland Wetlands and Watercourse Agency</b> 7 Meeting House Hill Road Franklin, CT 06254  Thomas E. Weber, Wetlands Enforcement Officer Phone: 860-642-4338 Fax: 860-642-6606	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Glastonbury Inland Wetlands and Watercourse Agency</b> Mailing Address: P.O. Box 6523 Glastonbury, CT 06033-6523 Physical Address 2155 Main St Glastonbury, CT 06033  Tom Mocko, Environmental Planner Phone: (860) 652-7514 Fax: 860-368-2523 <a href="mailto:Thomas.macko@glastonbury-ct.gov">Thomas.macko@glastonbury-ct.gov</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<b>Guilford Inland Wetlands Commission</b> Town Hall South 50 Boston Street Guilford, CT 06437  Regina Reid, Inland Wetlands Enforcement Officer 203-453-8031 Fax: 203-453-8034 <a href="mailto:reidr@ci.guilford.ct.us">reidr@ci.guilford.ct.us</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Lebanon Inland Wetlands and Watercourses Commission</b> 579 Exeter Road Lebanon, CT 06249  Philip Chester, Town Planner Phone: 860-642-2006 Fax: 860-642-2022 <a href="mailto:pchester@lebanontownhall.org">pchester@lebanontownhall.org</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Middletown Inland Wetlands and Watercourse Agency</b> 245 DeKoven Drive, Suite 202 Middletown, CT 06457  Matt Dodge, Planning/Environmental Specialist Phone: 860-638-4840	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Montville Inland Wetlands Commission</b> 310 Norwich New London Turnpike Uncasville, CT 06382  Colleen Bezanson, Planner II Phone 860-848-8549 x379 Fax: 860-848-2354 <a href="mailto:cbezanson@montville-ct.org">cbezanson@montville-ct.org</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>North Haven Inland Wetlands Commission</b> Town of North Haven Memorial Town Hall 18 Church Street North Haven, CT 06473  <a href="mailto:Alan.Fredricksen@town.north-haven.ct.us">Alan Fredricksen, Land Use Office</a> 203-239-5321x 730 Fax: 203-239-2130 <a href="mailto:Fredricksen.alan@town.north-haven.ct.us">Fredricksen.alan@town.north-haven.ct.us</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Norwich Wetlands, Watercourses and Conservation Commission</b> 23 Union Street Norwich, CT 06360  Mike Schaefer, City Planner Phone: 860-823-3735 Fax: 860-823-3715	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<a href="mailto:norplan@cityofnorwich.org">norplan@cityofnorwich.org</a>		
<b>Oxford Conservation Commission &amp; Inland Wetlands Agency</b> 486 Oxford Road Oxford, CT 06478  Andrew Ferrillo, Jr. <a href="#">Inland Wetlands Enforcement Officer</a> Phone: 203-888-2543 ext. 3038 Fax: <a href="tel:203-888-2136">203-888-2136</a> <a href="mailto:IWOffer@Oxford-ct.gov">IWOffer@Oxford-ct.gov</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Plainville Inland Wetland and Watercourse Agency</b> Town of Plainville One Central Square Plainville, CT 06062  Mark S. DeVoe, AICP, Director of Planning and Economic Development Phone: 860-793-0221 ext 210 Email: <a href="mailto:devoe@plainville-ct.gov">devoe@plainville-ct.gov</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Pomfret Inland Wetland and Watercourse Agency</b> 5 Haven Road Pomfret Center, CT 06259  Lynn Krajewski, Clerk Phone: 860-974-9135	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Putnam Inland Wetlands and Conservation Commission</b> Town Hall 126 Church Street Putnam, CT 06260  <a href="#">Frederick E. Wojick, Zoning &amp; Wetlands Agent</a> 860-963-6803x36 Fax: <a href="tel:860-963-5398">860-963-5398</a> <a href="mailto:Fwojick0234@charter.net">Fwojick0234@charter.net</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Rocky Hill Open Space and Conservation Commission</b> 761 Old Main Street Rocky Hill, CT 06067  James C Solimi, Director of Engineering & Highway Phone: 860-258-2762 Fax: <a href="tel:860-258-2703">860-258-2703</a> <a href="mailto:Jsolimi@ci.rocky-hill.ct.us">Jsolimi@ci.rocky-hill.ct.us</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Southbury Inland Wetlands Commission</b> Town Hall 501 Main Street South, 3 <sup>rd</sup> Floor Southbury, CT 06488	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit</li> </ul>	Informal coordination planned for June/July.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<a href="#">Mark Massoud, Inland Wetlands Enforcement Officer</a> 203-262-0624 <a href="#">Fax: 203-264-3719</a> <a href="mailto:landuse@southbury-ct.gov">landuse@southbury-ct.gov</a>	(sections 22a-36 through 22a-45 of the CGS)	
<b>Vernon Inland Wetlands Commission</b> Town Hall <a href="#">14 Park Place</a> Vernon, CT 06066  <a href="#">Craig Perry, Inland Wetlands Enforcement Officer</a> 860-870-3637 <a href="#">Fax: 860-870-3683</a> <a href="mailto:planning@cl.vernon-ct.us">planning@cl.vernon-ct.us</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>Windham Inland Wetlands and Watercourses Agency</b> Town Hall 979 Main Street Willimantic, CT 06226  <a href="#">James Finger, Land Use Officer</a> Phone: 860-465-3045 <a href="#">Fax: 860-465-3039</a> <a href="mailto:jfinger@windhamct.com">jfinger@windhamct.com</a>	<b>Coordination</b> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45 of the CGS)</li> </ul>	Informal coordination planned for June/July.
<b>STATE OF RHODE ISLAND</b>		
<b>Rhode Island Department of Environmental Management (RIDEM) Office of Water Resources</b> 235 Promenade Street Providence, RI 02908-5767  Terry Walsh, 401 Coordinator 401-222-4700 ext. 7243  Chuck Horbert, Supervisor Freshwater Wetlands 401-222-4700 ext. 7402  Eric Beck, RIPDES 401-222-4700 ext. 7202	<b>Required Permit</b> <ul style="list-style-type: none"> <li>Water Quality Certification pursuant to section 401 of the CWA; RIDEM Water Resources (chapter 46-12 of the General Laws of Rhode Island.)</li> </ul>	May 30, 2013 - Contacted Terry Walsh regarding Section 401 coordination. Based on preliminary review of mapping, it appears that the project will fall entirely within Freshwater Wetlands jurisdiction. Terry requested we overlay CRMC boundaries to determine what agency will take lead role in reviewing project. She also noted that if the USACE processes the project under an Individual Permit, the RIDEM office still needs to sign off on the impacts, so close coordination is required. It was also agreed that USGS mapping would be sent to her with background information. Mapping was sent same day.
	<b>Required Permit</b> <ul style="list-style-type: none"> <li>RIPDES Notice of Intent - Storm Water General Permit for Construction Activity</li> </ul>	
	<b>Required Permit</b> <ul style="list-style-type: none"> <li>RIPDES Waste Water Discharge Permit for Hydrostatic Test Water</li> </ul>	
	<ul style="list-style-type: none"> <li>Rhode Island Fresh Water Wetland Act, RIGL. 2-1-18 et seq. (assumed that the wetlands aren't coastal or in the vicinity of coastal wetlands.)</li> </ul>	
<b>Rhode Island Department of Environmental Management (RIDEM) Office of Air Resources</b> 235 Promenade Street Providence, RI 02908-5767  Doug McVay, Chief, Office of Air Resources	<b>Consultation:</b> <ul style="list-style-type: none"> <li>Minor or Non-Minor Modification of Title V Permit</li> </ul>	Meeting held at Providence on May 17, 2013.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
Aleida Whitney, Senior Air Quality Specialist		
<b>RIDEM</b> <b>Division of Fish and Wildlife</b> 3 Fort Wetherill Rd. Jamestown, RI 02835  Mark Gibson, Deputy Chief 401-423-1935 <a href="http://www.dem.ri.gov/programs/bnatres/fishwild/">http://www.dem.ri.gov/programs/bnatres/fishwild/</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>RIGL Title 20 Chapter 20-37 Rhode Island Endangered Species or Animals and Plants</li> </ul>	
<b>Rhode Island Coastal Resource Management Council</b> Stedman Government Center - Suite 3 4808 Tower Hill Road Wakefield, RI 02879-1900  David Reis, Supervisor Phone: 401-783-7365 <a href="http://www.crmc.ri.gov/">http://www.crmc.ri.gov/</a>	<b>Required Permit</b> <ul style="list-style-type: none"> <li>Assent Application (Covers CZMA)</li> </ul>	
<b>Rhode Island Division of Planning and Development</b> Natural Heritage Program 235 Promenade Street Providence, RI 02908-5767  Paul Jordan Phone: 401-222-4700 ext. 4315 <a href="http://www.admin.ri.gov/">http://www.admin.ri.gov/</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>RIGL Title 20 Chapter 20-37 Rhode Island Endangered Species or Animals and Plants</li> </ul>	May 20, 2013 – Consultation letter sent.
<b>Rhode Island Historic Preservation &amp; Heritage Commission</b> 150 Benefit Street Providence, RI 02903  Edward F. Sanderson State Historic Preservation Officer Phone: 401-222-2678 <a href="http://www.preservation.ri.gov/">http://www.preservation.ri.gov/</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act (16 USC § 470(f))</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>STATE OF MASSACHUSETTS</b>		
<b>Massachusetts Executive Office of Energy and Environmental Affairs</b> <b>Massachusetts Environmental Protection Act (MEPA) Office</b> 100 Cambridge Street, Suite 900 Boston, MA 02114  Richard K. Sullivan Jr., Secretary 617-626-1000 Maeve Vallyly-Bartlett, Director 617-626-1041 <a href="http://www.mass.gov/eea/">http://www.mass.gov/eea/</a>	<b>Required Permit</b> <ul style="list-style-type: none"> <li>Compliance with MEPA Regulations (G.L. c. 30, §§ 61, through 62H; 301 CMR 11.00)</li> </ul>	Informal coordination planned for June/July.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<b>Massachusetts Department of Environmental Protection (Mass DEP) Boston Office and Northeast Region Office</b>  Lealdon Langley, Director Wetlands and Waterways Program One Winter Street Boston, MA 02108 617-574-6882  Rachel Freed, Northeast Region Section Chief 205B Lowell Street Wilmington, MA 01887 Main Phone: 978-694-3200	<b>Required Permit</b> <ul style="list-style-type: none"> <li>401 Water Quality Certification for Discharge of Dredged or Fill Material, Dredging, and Dredged Material Disposal in Waters Within the Commonwealth.</li> <li>Massachusetts Wetland Protection Act (MWPA – Municipalities typically cover local wetland permitting)</li> </ul>	May 30, 2013 – Talked with Rachel Freed, NE Regional Office. Rachel indicated that as long as the project did not need a Variance from the Wetlands Protection Act, the project would be handled by her office. It was agreed that a pre-application meeting at this early stage was not warranted, but would be after field work was completed later this summer. She also suggested early consultation with the Charles River Watershed Associated should tributaries to the Charles River be crossed. It was also agreed that USGS mapping would be sent to her with background information. Mapping was sent same day.
<b>Natural Heritage &amp; Endangered Species Program</b> 100 Hartwell St, Suite 230 West Boylston, MA 01583 Phone: 508-389-6300  Lauren Glorioso Endangered Species Review Assistant North/Central/West Area Phone: (508) 389-6361 Email: lauren.glorioso@state.ma.us	<b>Consultation</b> <ul style="list-style-type: none"> <li>Pursuant to 321 CMR 10:00 MESA</li> </ul>	May 20, 2013 – Consultation letter sent.
<b>Massachusetts Historical Commission</b> The Massachusetts Archives Building 220 Morrissey Boulevard Boston, MA 02125  Brona Simon Phone: 617-727-8470 Email: <a href="mailto:Ed.Bell@state.ma.us">Ed.Bell@state.ma.us</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Massachusetts Energy Facilities Siting Board (EFSB)</b> One South Station Fifth Floor Boston, MA 02110  Andy Greene, Director (617) 305-3526 Email: <a href="mailto:Andrew.Greene@state.ma.us">Andrew.Greene@state.ma.us</a>	<b>Consultation</b> <ul style="list-style-type: none"> <li>Review and comment on FERC-regulated energy projects (G.L. c.164, §§ 69H, 69J; 980 CMR)</li> </ul>	Informal coordination planned for June/July.
<b>MUNICIPALITIES of MASSACHUSETTS</b>		
<b>Ashland Conservation Commission</b> 101 Main Street, 2 <sup>nd</sup> Floor Ashland, MA 01721  Matthew Selby, Conservation Agent 508-881-0100 x656	<b>Consultation</b> <ul style="list-style-type: none"> <li>Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Boston (West Roxbury) Conservation Commission</b> 1 City Hall Square, Room 708 Boston, MA 02201-2022	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section</li> </ul>	Informal coordination planned for June/July.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
West Roxbury Liaison: Chris Tracy 617-635-3485	40) Notice of Intent.	
<b>Dedham Conservation Commission</b> 26 Bryant St Dedham, MA 02026  Frederick Civian, Chairman 781-751-9210	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Everett Conservation Commission</b> 484 Broadway Everett, MA 02149 (617) 389-2100	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Freetown Conservation Commission</b> 3 North Main Street Assonet, MA 02702  Keven Desmarais 508-644-2201	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Medford Conservation Commission</b> City Hall, Room 209 85 George P. Hassett Drive Medford, MA 02155  Alicia Hunt, Environmental Agent ahunt@medford.org 781-393-2137	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Needham Conservation Commission</b> Public Services Administration Building 500 Dedham Avenue Needham, MA 02492  Patricia Barry, Director of Conservation 781-455-7550 x248	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>New Bedford Conservation Commission</b> Office of Environmental Stewardship 133 William St (Rm 304) New Bedford, MA 02740 Tel: 508-991-6188  Michele Paul, Director Sarah Porter, Conservation Agent	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Middleborough Conservation Commission</b> Bank Building 20 Centre Street, 2nd floor Middleborough, MA 02346 508-946-2406  Patricia J. Cassidy, Conservation Agent	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Norwood Conservation Commission</b> 165 Nahatan Street Norwood, MA 02062  Al Goetz, Conservation Agent 781-762-0781	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<b>Plymouth Conservation Commission</b> 11 Lincoln Street Plymouth, MA 02360  Contact: Richard Vacca, Conservation Planner Phone: (508) 747-1620 (ext. 139)	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Waltham Conservation Commission</b> 119 School Street, Lower Level Waltham, MA 02451  Kim King, Conservation Commission Staff 781-314-3846	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Wellesley Natural Resources Commission</b> 525 Washington Street Lower Level Wellesley, MA 02482  Diane E. Torres, Assistant Natural Resources Commission Director Phone: (781) 431-1019, ext. 2294 nrc@wellesleyma.gov	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Weston Conservation Commission</b> Weston Town Hall PO Box 378 Weston, MA 02493  Michele Grzenda, Conservation Administrator 781-786-5068	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Westwood Conservation Commission</b> 50 Carby St Westwood, MA 02090  Karen Skinner Civian 781-251-2580	<b>Consultation</b> <ul style="list-style-type: none"> <li>Order of Conditions -Wetlands Protection Act (Massachusetts General Law Chapter 131 Section 40) Notice of Intent.</li> </ul>	Informal coordination planned for June/July.
<b>Ashland Historical Commission</b> Julie Nardone, Chair 101 Main Street Ashland, MA 01721	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Boston City Archaeologist</b> Joseph Bagley 201 Rivermoor Street West Roxbury, MA 02132	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Dedham Historical Commission</b> Dedham Town Hall 26 Bryant Street Dedham, MA 02026	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Everett Historical Commission</b> Everett City Hall 484 Broadway Everett, MA 02149	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Freetown Historical Commission</b> Mary E. Rezendes-Brown, Chair 3 North Main Street Assonet, MA 02702 Phone: 508-644-2201	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.



AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
Email: history@town.freetown.ma.us		
<b>Medford Historical Commission</b> Ryan Hayward, Chair c/o Office of Planning and Community Development Medford City Hall 85 George P. Hassett Drive Medford, MA 02155 Email: rhayw12345@aol.com	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Middleborough Historical Commission</b> Town of Middleborough Town Hall, 10 Nickerson Avenue Middleborough, MA 02346	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Needham Historical Commission</b> Town of Needham 1471 Highland Avenue Needham, MA 02492	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>New Bedford Historical Commission</b> New Bedford	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Norwood Historical Commission</b> Town of Norwood 566 Washington Street Norwood, MA 02062 Phone: 781-762-1240 Email: historicalcommission@norwoodma.gov	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Plymouth Historical Commission</b> Town of Plymouth 11 Lincoln Street Plymouth, MA 02360 Phone: 508-747-1620	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Waltham Historical Commission</b> Alex Greene, Chair 610 Main Street Waltham, MA 02452 Phone: 781-314-3389 Email: alex@backpagesbooks.com	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Wellesley Historical Commission</b> Helen Robertson, Chair 525 Washington Street Wellesley, MA 02482 Email: historicalcomm@wellesleyma.gov	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Weston Historical Commission</b> Ann Swaine P.O. Box 378 Weston, MA 02493 Phone: 781-786-5066 Email: swaine.a@westonmass.org	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>Westwood Historical Commission</b> Peter Paravalos, Chairperson 580 High Street Westwood, MA 02090	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	Informal coordination planned for June/July.
<b>NATIVE AMERICAN GROUPS (Federally Recognized)</b>		

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Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
<b>Wampanoag Tribe of Gay Head (Aquinnah)</b> Bettina M. Washington Tribal Historic Preservation Officer 20 Black Rock Road Aquinnah, Massachusetts 02535-9701	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Mashpee Wampanoag Indian Tribe</b> Ramona Peters 766 Falmouth Road Madaket Place Office A3 Mashpee, Massachusetts 02649	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Narragansett Indian Tribe</b> John B. Brown, III Tribal Historic Preservation Officer 215 Fenner Hill Road Hopkinton, Rhode Island 02832	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Mohegan Indian Tribe</b> James Quinn Tribal Historic Preservation Officer 13 Crow Hill Road Uncasville, Connecticut 06382-0488	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Mashantucket Pequot Tribal Nation</b> Kathleen Knowles Tribal Historic Preservation Officer Natural Resources Protection & Regulatory Affairs 550 Trolley Line Blvd. P.O. Box 3202 Mashantucket, Connecticut 06338-3202	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Delaware Nation of Oklahoma</b> Tamara Francis, Cultural Preservation Director 31064 State Highway 281 Anadarko, OK 73005	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Delaware Tribe of Indians</b> Dr. Brice Obermeyer Delaware Tribe Historic Preservation Office 1200 Commercial Street Roosevelt Hall, RM 212 Emporia State University Emporia, KS 66801	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>St. Regis Mohawk Tribe</b> Chief Randy Hart 412 State Route 37 Akwesasne, NY 13655  Arnold Printup, Jr. Tribal Historic Preservation Officer 412 State Route 37 Akwesasne, NY 13655	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Stockbridge-Munsee Community Band of Mohican Indians</b> Sherry White Tribal Historic Preservation Officer W13447 Camp 14 Road	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.

AIM PROJECT: INITIAL AGENCY CONTACTS		
Agency and Contact Information	Permit/Approval/Consultations/Action	Contact Description
Bowler, WI 54416		
<b>NATIVE AMERICAN GROUPS (Non-Federally Recognized)</b>		
<b>Massachusetts Commission on Indian Affairs</b> John A. Peters, Jr., Executive Director 100 Cambridge Street, Suite 300 Boston, MA 02114	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Connecticut Indian Affairs Council</b> Edward Sarabia Connecticut Department of Environmental Protection 79 Elm Street Hartford, CT 06106	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Ramapough Lenape Indian Nation</b> c/o Ramapough Conservancy Judith J. Sullivan	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Golden Hill Tribe of the Paugussett Indian Nation</b> Golden Hill Indian Reservation 95 Stanavage Road Trumbull, CT 06415	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Schaghticoke Tribal Nation</b> 33 Elizabeth Street Derby, CT 06418	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.
<b>Eastern Pequot Tribal Nation</b> James Cunha, Vice-Chair P.O. Box 208 North Stonington, CT 06359	<b>Consultation</b> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	May 17, 2013 – Consultation letter sent.

## **Attachment 3**

### Anticipated Environmental Permits, Reviews, and Consultations

<b>Algonquin Incremental Market ("AIM") Project</b> <b>Anticipated Federal and State Environmental Permit Approvals/Consultations</b>	
<b>Agency</b>	<b>Permits and Consultations</b>
<b>FEDERAL</b>	
<b>Federal Energy Regulatory Commission (FERC)</b> <ul style="list-style-type: none"> <li>Office of Energy Projects (OEP)</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>Certificate of Public Convenience and Necessity.</li> <li>National Environmental Policy Act (NEPA) – Environmental Impact Statement Review</li> </ul>
<b>U.S. Army Corps of Engineers (USACE)</b> <ul style="list-style-type: none"> <li>New England District – Regulatory Division</li> <li>New York District – Regulatory Division</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>Permit review covers impacts to wetlands, waterbodies and navigational concerns</li> <li>Authority granted under Section 10 Rivers and Harbors Act and Section 404 Clean Water Act</li> </ul>
<b>U.S. Environmental Protection Agency (USEPA)</b> <ul style="list-style-type: none"> <li>Region 1 (New England)</li> <li>Region 2 (New York)</li> </ul>	Consultations: <ul style="list-style-type: none"> <li>Wetland review during USACE Section 404 permit process</li> <li>Consultation during NEPA review and oversight of air permits</li> </ul>
<b>National Marine Fisheries Service (NOAA Fisheries)</b> <ul style="list-style-type: none"> <li>Office of Protected Resources</li> </ul>	Consultations: <ul style="list-style-type: none"> <li>Federal Endangered Species Act</li> <li>Magnuson-Stevens Fishery Conservation and Management Act</li> </ul>
<b>U.S. Fish and Wildlife Service (USFWS)</b> <ul style="list-style-type: none"> <li>New England Field Office</li> <li>New York Field Office</li> </ul>	Consultations: <ul style="list-style-type: none"> <li>Federal Endangered Species Act</li> <li>Migratory Bird Treaty Act</li> <li>Fish and Wildlife Coordination Act</li> </ul>
<b>United States Coast Guard</b> <ul style="list-style-type: none"> <li>New York Sector</li> </ul>	Consultation: <ul style="list-style-type: none"> <li>Tidal crossing of Hudson River</li> </ul>
<b>STATE OF NEW YORK</b>	
<b>New York State Department of Environmental Conservation (NYSDEC)</b> <ul style="list-style-type: none"> <li>Division of Environmental Permits</li> <li>Division of Air Resources</li> <li>Division of Fish, Wildlife &amp; Marine Resources               <ul style="list-style-type: none"> <li>Bureau of Marine Resources</li> <li>Bureaus of Wildlife and Fisheries</li> <li>New York Natural Heritage Program</li> <li>Bureau of Water Permits</li> <li>Bureau of Habitat (Freshwater-Tidal Wetlands Program)</li> </ul> </li> </ul>	Required Permits: <ul style="list-style-type: none"> <li>Section 401 Water Quality Certification (WQC) pursuant to Section 401 of the CWA. WQC will include the following:               <ul style="list-style-type: none"> <li>Freshwater Wetland Permit</li> <li>Tidal Wetland Permit</li> <li>State Pollution Discharge Elimination System (SPDES) Hydrostatic Test Water</li> <li>Protection of Waters Permit</li> </ul> </li> <li>Construction Stormwater General Permit - Stormwater Pollution Prevention Plan (SWPPP)</li> <li>Air Permits for Compressor Station Modifications</li> </ul>
<b>New York State Department of State (NYSDOS)</b> <ul style="list-style-type: none"> <li>Office of Communities &amp; Waterfronts</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>Coastal Zone Consistency Review</li> </ul>
<b>New York State Office of General Services</b> <ul style="list-style-type: none"> <li>Real Estate Development - Land Management</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>Application for Use of Land Underwater</li> </ul>
<b>New York State Office of Parks, Recreation &amp; Historic Preservation</b> <ul style="list-style-type: none"> <li>Historic Preservation Office – Environmental Review Program</li> </ul>	Consultation: <ul style="list-style-type: none"> <li>Review and consultation regarding Section 106, National Historic Preservation Act</li> <li>Review and consultation regarding for potential encroachment across state lands</li> </ul>
<b>New York City Department of Environmental Protection</b>	Required Permits: <ul style="list-style-type: none"> <li>Stormwater Pollution Prevention Plan and erosion and sediment control</li> </ul>
<b>County of Westchester, New York</b>	Consultation: <ul style="list-style-type: none"> <li>Blue Mountain Reservation</li> <li>North County Trailway</li> </ul>
<b>Town of Haverstraw, NY</b>	Consultation: <ul style="list-style-type: none"> <li>Cheescote Park</li> </ul>

<b>Algonquin Incremental Market ("AIM") Project</b> <b>Anticipated Federal and State Environmental Permit Approvals/Consultations</b>	
<b>Agency</b>	<b>Permits and Consultations</b>
<b>STATE OF CONNECTICUT</b>	
<b>Connecticut Department of Energy and Environmental Protection (CTDEEP)</b> <ul style="list-style-type: none"> <li>○ Bureau of Water Protection and Land Reuse</li> <li>○ Bureau of Natural Resources <ul style="list-style-type: none"> <li>❖ Wildlife Division - Natural Diversity Data Base</li> <li>❖ Inland Fisheries</li> <li>❖ Marine Fisheries</li> <li>❖ Forestry Division</li> </ul> </li> <li>○ Bureau of Air Management</li> </ul>	<p>Required Permits:</p> <ul style="list-style-type: none"> <li>○ Water Quality Certification pursuant to section 401 of the CWA</li> <li>○ Inland Wetlands and Watercourses</li> <li>○ Water Diversion Protection of Waters Permit- water withdrawal non consumptive use</li> <li>○ Stream Encroachment Lines.</li> <li>○ Flood Management Certification</li> <li>○ General Permit for discharges of hydrostatic</li> <li>○ Stormwater and Dewatering Wastewaters from Construction</li> <li>○ Air Permits for modifications to compressor stations</li> </ul> <p>Consultation:</p> <ul style="list-style-type: none"> <li>○ State-listed threatened and endangered species consultations</li> <li>○ Warmwater/coldwater fisheries</li> <li>○ Marine fisheries</li> </ul>
<b>Connecticut Siting Council</b>	<p>Consultation:</p> <ul style="list-style-type: none"> <li>○ Review and certification of energy facilities through the FERC process.</li> </ul>
<b>Connecticut Department of Economic and Community Development</b> <b>Offices of Culture and Tourism</b> <ul style="list-style-type: none"> <li>○ Connecticut State Historic Preservation Office</li> <li>○ Connecticut Office of the State Archaeologist</li> </ul>	<p>Consultation</p> <ul style="list-style-type: none"> <li>○ Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>
<b>Connecticut Indian Affairs Council</b>	<p>Consultation:</p> <ul style="list-style-type: none"> <li>○ Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>
<b>Connecticut Commission on Culture and Tourism</b>	<p>Consultation:</p> <ul style="list-style-type: none"> <li>○ Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>
<b>Municipal Inland Wetlands and Watercourse Agencies</b> <ul style="list-style-type: none"> <li>○ Berlin      ○ Guilford      ○ Plainville</li> <li>○ Chaplin      ○ Lebanon      ○ Pomfret</li> <li>○ Cromwell      ○ Middletown      ○ Putnam</li> <li>○ Danbury      ○ Montville      ○ Rocky Hill</li> <li>○ Farmington      ○ North Haven      ○ Southbury</li> <li>○ Franklin      ○ Norwich      ○ Vernon</li> <li>○ Glastonbury      ○ Oxford      ○ Windham</li> </ul>	<p>Consultation/Permit:</p> <ul style="list-style-type: none"> <li>○ Inland Wetlands and Watercourses - Wetland Permit</li> </ul>
<b>STATE OF RHODE ISLAND</b>	
<b>Rhode Island Department of Environmental Management (RIDEM)</b> <b>Bureau of Environmental Protection</b> <ul style="list-style-type: none"> <li>○ Office of Water Resources</li> <li>○ Office of Air Resources</li> </ul>	<p>Required Permits:</p> <ul style="list-style-type: none"> <li>○ Water Quality Certification pursuant to section 401 of the CWA</li> <li>○ Rhode Island Pollution Discharge Elimination System (RIPDES) <ul style="list-style-type: none"> <li>❖ Notice of Intent - Storm Water General Permit for Construction Activity</li> <li>❖ RIPDES Waste Water Discharge Permit for Hydrostatic Test Water</li> </ul> </li> <li>○ Rhode Island Fresh Water Wetland Act</li> <li>○ Air Permit for Modifications to Burrillville Compressor Station</li> </ul>

<b>Algonquin Incremental Market ("AIM") Project</b> <b>Anticipated Federal and State Environmental Permit Approvals/Consultations</b>	
<b>Agency</b>	<b>Permits and Consultations</b>
<b>Rhode Island Coastal Resource Management Council (CRMC)</b>	Required Permit: <ul style="list-style-type: none"> <li>Assent Application (includes Coastal Zone Management Act consistency review)</li> </ul>
<b>Rhode Island Division of Planning and Development</b> <ul style="list-style-type: none"> <li>Natural Heritage Program</li> </ul>	Consultation: <ul style="list-style-type: none"> <li>Rhode Island Endangered Species or Animals and Plants</li> </ul>
<b>Rhode Island Historical Preservation &amp; Heritage Commission</b>	Consultation: <ul style="list-style-type: none"> <li>Review under Section 106 of the National Historic Preservation Act</li> </ul>
<b>COMMONWEALTH OF MASSACHUSETTS</b>	
<b>Massachusetts Executive Office of Energy and Environmental Affairs</b> <ul style="list-style-type: none"> <li>Massachusetts Environmental Protection Act (MEPA) Office</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>MEPA Certificate</li> </ul>
<b>Massachusetts Office of Coastal Zone Management</b>	Required Permit: <ul style="list-style-type: none"> <li>Coastal Zone Management Consistency Determination</li> </ul>
<b>Massachusetts Department of Environmental Protection (MassDEP)</b> <ul style="list-style-type: none"> <li>Northeast Regional Office</li> <li>Boston Office</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>401 Water Quality Certification</li> </ul>
<b>Massachusetts Energy Facilities Siting Board</b>	Consultation: <ul style="list-style-type: none"> <li>Review and comment on FERC-regulated energy projects</li> </ul>
<b>Massachusetts Division of Wildlife and Fisheries</b> <ul style="list-style-type: none"> <li>Natural Heritage &amp; Endangered Species Program</li> </ul>	Consultation: <ul style="list-style-type: none"> <li>Massachusetts Endangered Species Act (MESA)</li> </ul>
<b>Massachusetts Historical Commission</b>	Consultation: <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act</li> </ul>
<b>Massachusetts Commission on Indian Affairs</b>	Consultation: <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act</li> </ul>
<b>Municipal Conservation Commissions</b> <ul style="list-style-type: none"> <li>Ashland</li> <li>Boston (West Roxbury)</li> <li>Dedham</li> <li>Everett</li> <li>Freetown</li> <li>Medford</li> <li>Needham</li> <li>New Bedford</li> <li>Middleborough</li> <li>Norwood</li> <li>Plymouth</li> <li>Waltham</li> <li>Wellesley</li> <li>Weston</li> <li>Westwood</li> </ul>	Required Permit: <ul style="list-style-type: none"> <li>Order of Conditions –Massachusetts Wetlands Protection Act</li> <li>Local Wetland Bylaws/Ordinances</li> </ul>
<b>Municipal Historical Commissions</b> <ul style="list-style-type: none"> <li>Ashland Historical Commission</li> <li>Boston City Archaeologist</li> <li>Dedham Historical Commission</li> <li>Everett Historical Commission</li> <li>Freetown Historical Commission</li> <li>Medford Historical Commission</li> <li>Middleborough Historical Commission</li> <li>Needham Historical Commission</li> <li>New Bedford Historical Commission</li> <li>Norwood Historical Commission</li> <li>Plymouth Historical Commission</li> <li>Waltham Historical Commission</li> <li>Wellesley Historical Commission</li> <li>Weston Historical Commission</li> <li>Westwood Historical Commission</li> </ul>	Consultations: <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>

<b>Algonquin Incremental Market ("AIM") Project</b> <b>Anticipated Federal and State Environmental Permit Approvals/Consultations</b>	
<b>Agency</b>	<b>Permits and Consultations</b>
<b>Native American Groups</b>	
<b>Federally Recognized</b> <ul style="list-style-type: none"> <li>o Wampanoag Tribe of Gay Head (Aquinnah)</li> <li>o Mashpee Wampanoag Indian Tribe</li> <li>o Narragansett Indian Tribe</li> <li>o Mohegan Indian Tribe</li> <li>o Mashantucket Pequot Tribal Nation</li> <li>o Delaware Nation of Oklahoma</li> <li>o Delaware Tribe of Indians</li> <li>o St. Regis Mohawk Tribe</li> <li>o Stockbridge-Munsee Community Band of Mohican Indians</li> </ul>	Consultations: <ul style="list-style-type: none"> <li>o Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>
<b>Non-Federally Recognized</b> <ul style="list-style-type: none"> <li>o Massachusetts Commission on Indian Affairs</li> <li>o Connecticut Indian Affairs Council</li> <li>o Ramapough Lenape Indian Nation</li> <li>o Golden Hill Tribe of the Paugussett Indian Nation</li> <li>o Schaghticoke Tribal Nation</li> <li>o Eastern Pequot Tribal Nation</li> </ul>	Consultations: Section 106, National Historic Preservation Act (16 USC § 470f)



## **Attachment 4**

### **Government Officials**

AIM PROJECT			
Federal, State & Local Contacts	Contact Person	Office/Title	Address
CT Attorney General's Office	George Jepsen	Attorney General	Office of the Attorney General 55 Elm Street, Hartford, CT 06106
CT Attorney General's Office	Kimberly Massicotte	Assistant Attorney General	Office of the Attorney General 55 Elm Street, Hartford, CT 06106
CT Attorney General's Office	Joseph Rubin	Assistant Attorney General	Office of the Attorney General 55 Elm Street, Hartford, CT 06106
CT Attorney General's Office	Robert Snook	Assistant Attorney General	Office of the Attorney General 55 Elm Street, Hartford, CT 06106
CT Attorney General's Office	Robert Clark	Special Assistant Attorney General	Office of the Attorney General 55 Elm Street, Hartford, CT 06106
CT Department of Energy and Environmental Protection	Daniel Esty	Commissioner	Connecticut DEEP 79 Elm Street, Hartford, CT 06106
CT Department of Energy and Environmental Protection	Jessie Stratton	Policy Development Dir. to DEEP/Commissioner Esty	Connecticut DEEP 79 Elm Street, Hartford, CT 06106
CT Public Utility Regulatory Authority	Michael Caron	Director	Ten Franklin Square , New Britain, CT 06051
CT Public Utility Regulatory Authority	Arthur House	Chairman	Ten Franklin Square , New Britain, CT 06051
CT Public Utility Regulatory Authority	John W. Betkoski III	Vice Chairman	Ten Franklin Square , New Britain, CT 06051
CT Office of the Consumer Counsel	Elin Swanson Katz	Consumer Counsel	10 Franklin Sq. New Britain, CT 06051-2605
CT Office of the Consumer Counsel	Joseph Rosenthal	Principal Attorney	10 Franklin Sq. New Britain, CT 06051-2605
CT Office of the Consumer Counsel	Richard E. Sobolewski	Supervisor of Utility Financial Analysis	10 Franklin Sq. New Britain, CT 06051-2605
CT Governor's Office	Paul Mounds	Director, Government Relations, Office of the Governor	300 Capitol Avenue, Room 416, Hartford, CT 06106
CT Governor's Office	Liz Donohue	Policy Director, Office of the Governor	300 Capitol Avenue, Room 416, Hartford, CT 06106
CT U.S. Senator Chris Murphy	Robert Michalik	Economic Development Director	One Constitution Plaza, 7th Floor, Hartford, CT 06103
CT U.S. Senator Chris Murphy	Kenny Curran	State Director	One Constitution Plaza, 7th Floor, Hartford, CT 06103
CT 1st Congressional District	John Rossi	Office of Congressman John Larson	114 West Main Street Old Post Office Plaza, Suite 206 New Britain, CT 06051
CT 2nd Congressional District	Jenny Contois	District Director to Congressman Joe Courtney	114 West Main Street Old Post Office Plaza, Suite 206 New Britain, CT 06051
CT 5th Congressional District	Samantha Pillion	District Office of Congresswoman Elizabeth Esty	114 West Main Street Old Post Office Plaza, Suite 206 New Britain, CT 06051
CT 5th Congressional District	Matt Abdifar	Community Liaison	114 West Main Street Old Post Office Plaza, Suite 206 New Britain, CT 06051
CT U.S. Senator Richard Blumenthal	Rich Kehoe	State Director	90 State House Square 10th Floor, Hartford, CT 06103
CT U.S. Senator Richard Blumenthal	Matthew LeBeau	Research Aide	90 State House Square 10th Floor, Hartford, CT 06103

<b>Glastonbury, CT</b>	Richard Johnson	Town Manager	2155 Main Street, 2nd Floor Town Hall, Glastonbury, CT 06033
<b>Glastonbury, CT</b>	Yolanda Olenick	Executive Assistant to Town Manager	2155 Main Street, 2nd Floor Town Hall, Glastonbury, CT 06033
<b>Chaplin, CT</b>	William H. Rose, IV	First Selectman	495 Phoenixville Rd., Chaplin, CT 06235
<b>Chaplin, CT</b>	John A. Smith	Selectman	495 Phoenixville Rd., Chaplin, CT 06235
<b>Chaplin, CT</b>	Irene J. Schein	Selectman	495 Phoenixville Rd., Chaplin, CT 06235
<b>Cromwell, CT</b>	Mertie Terry	First Selectman	41 West St., Town Hall 1st Flr., Cromwell, CT 06416
<b>Cromwell, CT</b>	Stuart Popper	Town Planner	41 West St., Town Hall 1st Flr., Cromwell, CT 06416
<b>Cromwell, CT</b>	Jon Harriman	Town Planner	41 West St., Town Hall 1st Flr., Cromwell, CT 06416
<b>Cromwell, CT</b>	Re Matus	Senior Executive Assistant	41 West St., Town Hall 1st Flr., Cromwell, CT 06416
<b>Cromwell, CT</b>	Allan D. Spotts	Board of Selectman	62 Blackhaw Drive, Cromwell, CT 06416
<b>Lebanon, CT</b>	Joyce Okonuk	First Selectman	Town Hall, 579 Exeter Road, Lebanon, CT 06249
<b>Lebanon, CT</b>	Patti Handy	Assistant to the First Selectman	Town Hall, 579 Exeter Road, Lebanon, CT 06249
<b>Lebanon, CT</b>	Linda Finelli	Selectman	Town Hall, 579 Exeter Road, Lebanon, CT 06249
<b>Lebanon, CT</b>	John Bendoraitis		Town Hall, 579 Exeter Road, Lebanon, CT 06249
<b>Manchester, CT</b>	Leo V. Diana	Mayor	Town of Manchester 41 Center Street, Manchester, CT 06040
<b>Manchester, CT</b>	Jay Moran	Deputy Mayor	Town of Manchester 41 Center Street, Manchester, CT 06040
<b>Manchester, CT</b>	Scott Shanley	General Manager	Town of Manchester, Connecticut 41 Center Street, Manchester, CT 06040
<b>Manchester, CT</b>	Donna Huot	Executive Assistant to the General Manager	Town of Manchester, Connecticut 41 Center Street, Manchester, CT 06040
<b>Franklin, CT</b>	Richard Matters	First Selectman	Office of the First Selectman, Franklin Town Hall 7 Meeting House Hill Road, Franklin, CT 06254
<b>Franklin, CT</b>	Russell Beisiegel	Selectman	Office of the First Selectman, Franklin Town Hall 7 Meeting House Hill Road, Franklin, CT 06254
<b>Franklin, CT</b>	Charles Grant	Selectman	Office of the First Selectman, Franklin Town Hall 7 Meeting House Hill Road, Franklin, CT 06254
<b>Norwich, CT</b>	Peter Nystrom	Mayor	Norwich City Hall 100 Broadway, Rm. 330, Norwich, CT 06360
<b>Norwich, CT</b>	Alan Bergren	City Manager	Norwich City Hall 100 Broadway, Rm. 219, Norwich, CT 06360
<b>Oxford, CT</b>	George Temple	First Selectman	Oxford Town Hall, 48 Oxford Road, Oxford, CT 06478
<b>Oxford, CT</b>	Jeffrey Haney	Selectman	Oxford Town Hall, 48 Oxford Road, Oxford, CT 06478
<b>Oxford, CT</b>	David McKane	Selectman	Oxford Town Hall, 48 Oxford Road, Oxford, CT 06478
<b>Oxford, CT</b>	Andrew McGeever	Economic Development Director	Oxford Town Hall, 48 Oxford Road, Oxford, CT 06478
<b>Rocky Hill, CT</b>	Anthony LaRosa	Mayor	761 Old Main Street, Rocky Hill, CT 06067
<b>Rocky Hill, CT</b>	Barbara Gilbert	Town Manager	761 Old Main Street, Rocky Hill, CT 06067
<b>Rocky Hill, CT</b>	James Sollmi	Dir. Highways & Engineering	761 Old Main Street, Rocky Hill, CT 06067
<b>Bethel, CT</b>	Matt Knickerbocker	First Selectman	Clifford J. Hurgin Municipal Center

			1 School Street, Bethel, CT, 06801
<b>Bethel, CT</b>	Wendy Smith	Office Administrator	Clifford J. Hurgin Municipal Center 1 School Street, Bethel, CT, 06801
<b>Danbury, CT</b>	Mark D. Boughton	Mayor	155 Deer Hill Avenue, Danbury, CT 06810
<b>Danbury, CT</b>	Farid Khouri	City Engineer	155 Deer Hill Avenue, Danbury, CT 06810
<b>Danbury, CT</b>	David Dey	Public Utilities Superintendent	Newtown Road, Danbury, CT 06810
<b>Danbury, CT</b>	Timothy Nolan	PU Foreman of Maintenance Transmission & Distribution	Newtown Road, Danbury, CT 06810
<b>Montville, CT</b>	Ronald McDaniel	Mayor	Montville Town Hall, 2nd Floor 310 Norwich-New London Tpke. Uncasville, CT 06382
<b>Danbury, CT</b>	Senator Michael McLachlan	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Danbury, CT</b>	Rep. Dan Carter	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Danbury, CT</b>	Rep. David Arconti	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Danbury, CT</b>	Rep. Janice Giegler	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Danbury, CT</b>	Rep. Robert Godfrey	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Danbury, CT</b>	Rep. Richard Smith	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Glastonbury, CT</b>	Senator Steve Cassano	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Glastonbury, CT</b>	Rep. Joseph Diminico	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Glastonbury, CT</b>	Rep. Prasad Srinivasan	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Lebanon, CT</b>	Senator Catherine Osten	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Lebanon, CT</b>	Rep. Brian Sear	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Lebanon, CT</b>	Rep. Linda Orange	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Manchester, CT</b>	Senator Steve Cassano	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Manchester, CT</b>	Rep. Jason Rojas	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Manchester, CT</b>	Rep. Geoff Luxenberg	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Manchester, CT</b>	Rep. Joseph Diminico	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Manchester, CT</b>	Rep. Timothy Larson	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Chaplin, CT</b>	Senator Anthony Guglielmo	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Chaplin, CT</b>	Rep. Brian Sear	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Cromwell, CT</b>	Senator Paul Doyle	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Cromwell, CT</b>	Rep. Christie Carpino	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Franklin, CT</b>	Senator Catherine Osten	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Franklin, CT</b>	Rep. Brian Sear	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Norwich, CT</b>	Senator Catherine Osten	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Norwich, CT</b>	Rep. Emmett Riley	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Norwich, CT</b>	Rep. Kevin Ryan	Legislative Office Building	300 Capitol Avenue, Hartford, CT 06106
<b>Oxford, CT</b>	Senator Robert Kane	Legislative Building	300 Capitol Avenue, Hartford, CT 06106
<b>Oxford, CT</b>	Rep. David Labriola	Legislative Building	300 Capitol Avenue, Hartford, CT 06106
<b>Rocky Hill, CT</b>	Senator Paul Doyle	Legislative Building	300 Capitol Avenue, Hartford, CT 06106
<b>Rocky Hill, CT</b>	Rep. Antonio Guerrero	Legislative Building	300 Capitol Avenue, Hartford, CT 06106
<b>Town of Stony Point, NY</b>	Geoffrey Finn	Supervisor	Stony Point Town Hall

			74 East Main Street, Stony Point, NY 10980
<b>Town of Stony Point, NY</b>	Jim McDonnell	Council Member	Stony Point Town Hall 74 East Main Street, Stony Point, NY 10980
<b>Village of Buchanan, NY</b>	Kevin Hay	Village Administrator, Clerk of Treasurer	Municipal Bldg, 236 Tate Avenue Buchanan, NY 10511
<b>City of Peekskill, NY</b>	Ed Dunphy	Corp. Counsel	Peekskill City Hall, 840 Main St., Peekskill, NY 10566
	Brian Havranek	Acting City Manager	Peekskill City Hall, 840 Main St., Peekskill, NY 10566
<b>Town of Cortlandt, NY</b>	Linda Puglisi	Supervisor	Town of Cortlandt 1 Heady St., Cortlandt Manor, NY 10567
<b>Town of Somers, NY</b>	Mary Beth Murphy	Supervisor	Town of Somers 335 Route 202, Somers, NY 10589
<b>Town of Yorktown, NY</b>	Michael Grace	Supervisor	Town of Yorktown 363 Underhill Ave., Yorktown Heights, NY 10598
<b>Town of Carmel, NY</b>	Ron Gainer	Town Engineer	Carmel Town Hall 60 McAlphin Ave., Mahopac, NY 10541
<b>Town of Southeast, NY</b>	Tony Hay	Supervisor	1360 Route 22, Brewster, NY 10509
<b>Office of Congresswoman Nita M. Lowey</b>	Patricia Keegan	District Director	White Plains District Office 222 Mamaroneck Ave., Suite 312 White Plains, NY 10605
<b>Boston, MA</b>	Michael F. Rush	Senator	Room 504, State House, Boston, MA 02133
<b>Boston, MA</b>	Paul McMurtry	Representative	Room 279, State House, Boston, MA 02133
<b>Boston, MA</b>	Edward F. Coppinger	Representative	Room 26, State House, Boston, MA 02133
<b>Boston, MA</b>	Mayor Thomas Menino	Mayor	One City Hall Square, Boston, MA 02201
<b>Boston, MA</b>	Matt O'Malley	Councilor	One City Hall Square, Boston, MA 02201
<b>Boston, MA</b>	Brian Swett	Director of Environmental & Energy	One City Hall Square, Boston, MA 02201
<b>Dedham, MA</b>	William Keegan	Town Administrator	Town of Dedham 26 Bryant Street, Dedham, MA 02026
<b>Westwood, MA</b>	Mike Jaillett	Town Administrator	Town of Westwood, Town Hall 580 High Street, Westwood, MA 02090
<b>Rhode Island</b>	Peter Kilmartin	Attorney General	Office of the Attorney General 150 South Main Street Providence, RI 02903
<b>RI Department of Environmental Management</b>	Janet Coit	Director	235 Promenade Street Providence, RI 02908
<b>RI Office of Governor</b>	Kate Brock,	Policy Analyst, Gov. Office	82 Smith Street Providence, RI 02903
<b>RI Office of Governor</b>	Jim Goncalo	Town Administrator	82 Smith Street Providence, RI 02903
<b>Tiverton, RI</b>	Kate Michaud	Town Planner	343 Highland Road, Tiverton, RI 02878
<b>Tiverton, RI</b>	Staff to Congressman Cicilline		343 Highland Road, Tiverton, RI 02878

		Town Council President	40 Commons; P.O. Box 226; Little Compton, RI 02837
<b>Little Compton, RI</b>	Lou DiPalma	Senator	82 Smith Street, Providence, RI 02903
<b>Tiverton / Little Compton State Legislators</b>	State Rep. Dennis Canario	State Representative	82 Smith Street, Providence, RI 02903
<b>Tiverton / Little Compton State Legislators</b>	Staff to U.S. Senator Reed		One Exchange Terrace, Suite 408 Providence, RI 02903-1744
<b>Tiverton / Little Compton State Legislators</b>	Staff to U.S. Senator Whitehouse		170 Westminster St Providence, RI 02903
<b>Burrillville, RI</b>	Michael Wood	Town Manager	105 Harrisville Main Street. <b>Harrisville, RI</b> 02830
<b>Burrillville, RI</b>	Paul Fogarty	Senator	82 Smith Street, Providence, RI 02903
<b>Burrillville State Legislators</b>	Caleb Keable	Representative	203 Arthur's Way, Pascoag, RI 02859

## **Attachment 5**

### **Third Party Contractor Proposals**

**PRIVILEGED AND CONFIDENTIAL**  
**FILED UNDER SEPARATE COVER**

## **Attachment 6**

### Stakeholder Outreach Program



## Stakeholder Outreach Program

### **Algonquin Incremental Market Project Stakeholder Outreach Program Executive Summary**

Prior to the submission of its request for authority to initiate the Federal Energy Regulatory Commission's (FERC) Pre-Filing Process (Pre-Filing Letter), Spectra Energy's Algonquin Gas Transmission, LLC (Algonquin) implemented a comprehensive stakeholder outreach program in an effort to identify and potentially resolve issues raised by stakeholders with regard to the Algonquin Incremental Market Project (Project). In furtherance of the Applicant's solid track record of safe and environmentally responsible operations, the Project's team members reached out to public and governmental stakeholders as the Project's scope evolved in order to solicit their input to help inform facility design.

Pursuant to the Project's Public and Agency Participation Plan, representatives of Algonquin Gas Transmission began contacting governmental stakeholders in February 2013, in advance of landowner notifications, and well in advance of the submission of the Pre-Filing Letter. Recognizing that the Project's stakeholder outreach program will continue beyond the conclusion of the Project's construction activities, some key components include:

- Notification of state, municipal, and county officials, and state legislative and congressional delegation members in advance of or contemporaneous with notification of affected landowners in order to ensure that interested stakeholders have timely access to Project information;
- Coordination among specialists within the Project team to facilitate information exchange and dissemination to interested stakeholders; and
- Ongoing communication with interested stakeholders in order to finalize facility designs.

The Project, an infrastructure investment that expands the pipeline capacity of the existing Algonquin system, will allow abundant, domestic natural gas supplies from the Appalachian basin to flow reliably into the Northeast, helping to meet the increasing demand from home heating and electric generation while lowering energy costs.

The Project will affect landowners because it requires construction of approximately 25.5 miles of mainline pipe; construction of 18.0 miles of lateral pipeline; modifications to existing compressor stations located in New York, Connecticut and Rhode Island; modifications to existing meter stations located in New York, Connecticut and Massachusetts; and construction of three new meter stations. The Project facilities will be constructed largely within Algonquin's current footprint to minimize impacts to landowners, communities and the environment.

Algonquin is utilizing the aforementioned components of its outreach program to inform stakeholders of the proposed scope leading up to the submission of the Pre-Filing Letter.

### **1. Single Point of Contact to Ensure Consistent Message**

Since April 2013, the Applicant has had in place a dedicated a 24 hour toll-free telephone number, (866) 873-2579, for the Project which is staffed by a representative located in the Applicant's Cheshire, Connecticut office. The toll free number has been listed in every communication made by the Applicant to landowners to facilitate their ability to obtain additional information in a timely manner. In addition, the Applicant designated a spokesperson and primary contact for fielding inquiries posed by the media and other interested stakeholders.

### **2. Systematic Stakeholder Outreach**

#### ***State, Local and Congressional Officials***

Prior to notifying affected landowners along the pipeline route, the government relations specialists on the Project team contacted state, county, municipal and other local officials, state legislators, and congressional delegation members and/or their staffs to apprise them of the Project. In conjunction with those contacts, the Applicant prepared preliminary maps and fact sheets outlining the purpose of the Project and the proposed facilities. The Applicant's representatives solicited input from interested stakeholders and will utilize that feedback as the design process evolves.

In order to enable local, state and federal government officials and elected representatives to be a touchstone for their constituents and serve as advocates for their concerns, the Applicant notified various officials prior to making written notification to affected landowners. The briefings of the aforementioned officials and staffs were well received and allowed them to be informed in anticipation of possible telephone calls or emails from constituents.

#### ***State and Federal Regulatory Agencies***

The Project team has endeavored to reach out to federal and state regulatory agencies from the outset of the Project's development. Contacts occurred as early as May 2013, and the Project environmental team will work with FERC staff to schedule federal and state interagency meetings. Just as input from landowners and public officials is important in our facility design, the feedback received from regulatory agencies also will be used in a similar fashion. As with other outreach activities, the Applicant's overarching goal is to submit a comprehensive certificate application that adequately supports the need for the Project, demonstrates mitigation of the Project's impacts and is responsive to the input received to date.

### **3. Impacted Landowner Outreach**

Shortly after the sessions with public officials, the Applicant mailed letters to affected landowners to describe the Project and to provide information about their rights as landowners consistent with FERC's landowner outreach process. Each letter contained a description of the Project and an indication that the recipient's property might be impacted by the Project. In addition, each letter contained the Project's toll-free telephone number and a general description of what landowners should expect from the Applicant, in terms of future survey requests and survey activities. Another letter was subsequently mailed to landowners formally requesting survey permission for the right-of-way for the proposed facilities. Most recently, landowners were sent personal invitations to attend landowner informational meetings in their area to discuss the proposed work, ask questions or voice concerns. The landowner informational meetings were held in April and May 2013, and additional landowner informational meetings will be held in the July-August 2013 timeframe.

#### **4. Stakeholder Communications: Newsletters, Mailings, and Website**

In order to provide current information on the Project and enable involvement by stakeholders, regular communications by mailings and/or newsletters will be provided to affected landowners as well as to public officials and other interested parties. A Project page on the Spectra Energy website was launched in September 2012. In addition to the toll-free telephone number, the website has been referenced and will continue to be referenced in communications related to the Project. Generally, the website will contain Project descriptions, information on FERC's processes, Project timetables, public meeting notices including locations, and answers to frequently asked questions. It also will contain hyperlinks to the Applicant's certificate application and to the PDF version of FERC's informational brochure entitled, *"An Interstate Natural Gas Facility on My Land? What Do I Need to Know?"* As the Project advances, notices of open houses and opportunities for public comment as well as news articles and other timely information resources will be posted on the Project's website.

#### **5. Landowner Informational Meetings and Informational Open Houses**

In an effort to provide timely Project information to landowners and public officials, the Project team conducted landowner informational meetings in April and May 2013, and will conduct additional landowner informational meetings in July-August 2013 timeframe. If deemed necessary, the Project team will conduct informational open houses during the third quarter of 2013.

Public officials who were briefed initially and affected landowners will be invited to attend the open houses. At each of the open houses, representatives from multiple disciplines within the Project team (e.g. right-of-way (ROW), environmental, engineering, construction, regulatory, stakeholder outreach, government relations, and

legal) will be on-hand to answer questions. The open houses are designed to be interactive in nature. These meetings are invaluable for Project team members because they will be able to hear first hand from interested stakeholders and respond to important questions about the ROW, easements, land records, pipeline safety, impacts of construction activities, and other aspects of the Project.

Within seven days of FERC issuing approval for the Applicant to enter into the Pre-Filing process, a proposed schedule of the open houses will be submitted to FERC. As the open house dates near, the dates and locations will be disseminated to landowners, public officials, and other stakeholders. Print advertisements will also be placed in local newspapers. The following is a description of the format and the types of information that will be provided at the open houses:

- a. Meetings generally will be conducted from 5:30–7:30 p.m.; team members from various disciplines will staff information stations;
- b. Displays will include a map providing an overview of the Project as well as mounted aerial and topographical maps; there will be sign-up sheets and follow-up sheets related to individual landowner inquiries;
- c. Handouts containing Project overviews and timelines, tables of required permits, Project-specific ‘Frequently Asked Questions’ and Project team contact information will be available; and
- d. Copies of *“An Interstate Natural Gas Facility on My Land? What Do I Need to Know?”* and information about pipeline safety, environmental mitigation measures, and smaller-scale Project corridor maps will be available.

## **6. FERC Site Visits and Scoping Meetings**

The Project team anticipates that FERC may conduct scoping meetings in local project areas in New York, Connecticut, Rhode Island and Massachusetts. As such, public officials and impacted landowners will be notified in writing by the Applicant in advance of FERC’s scoping meetings and in addition to FERC’s official notifications. Letters also will contain general descriptions of the purpose of the scoping meetings. Project team members will be at the scoping meetings to provide information.

## **7. Applicant's Stakeholder Outreach and Government Relations Team**

The Applicant will devote the necessary internal resources to ensure that stakeholder outreach and government relations activities are managed in a timely fashion. The Stakeholder Outreach and Government Relations teams recognize the importance of a comprehensive outreach program and will continue to implement it throughout the Project. A detailed Public and Agency Participation Plan has been developed and will be updated as needed. Updates will be included in the monthly reports to FERC staff.



Legend

Compressor Station (C/S)

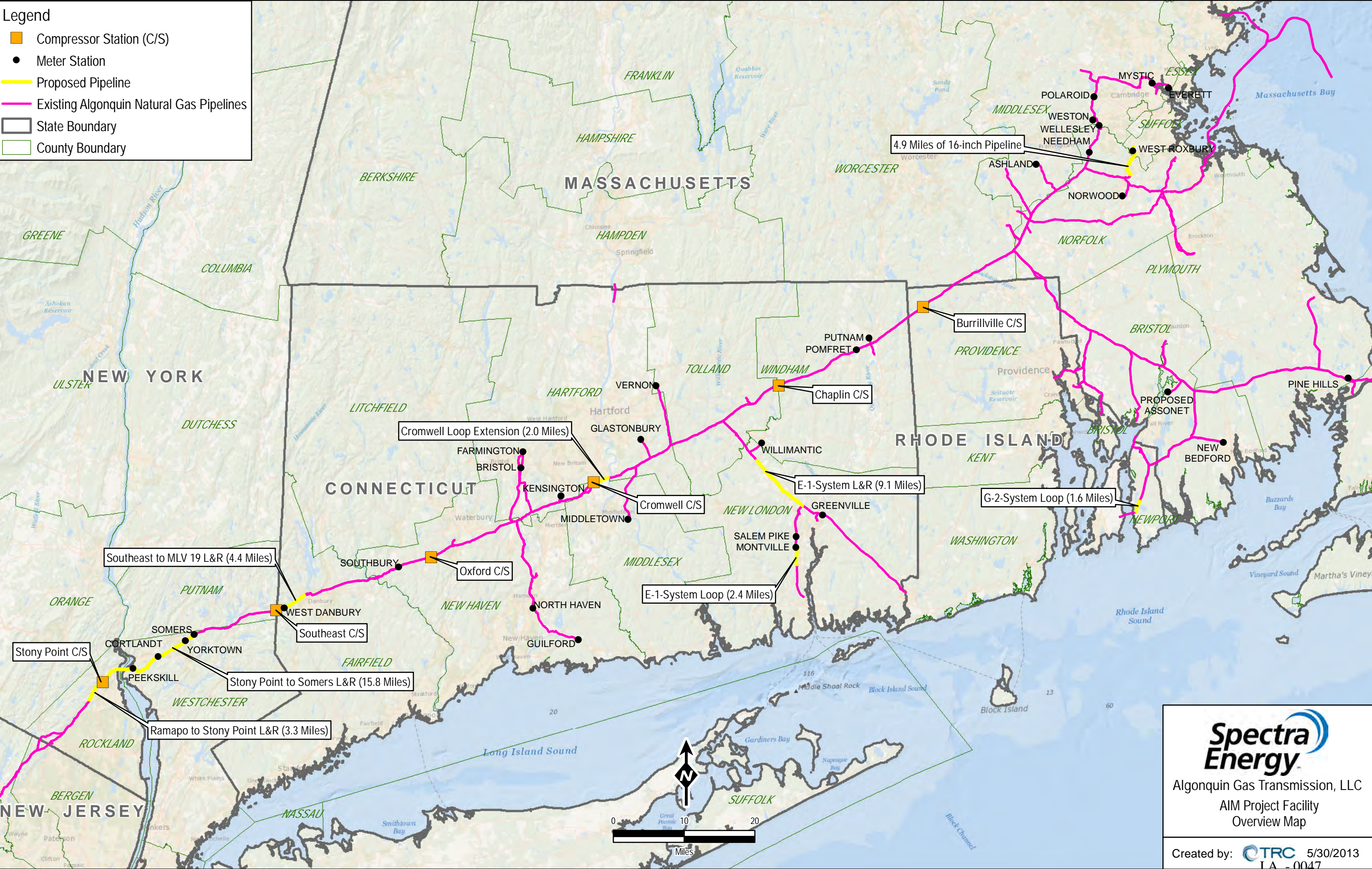
Meter Station

Proposed Pipeline

Existing Algonquin Natural Gas Pipelines

State Boundary

County Boundary



Spectra  
Energy

Algonquin Gas Transmission, LLC  
AIM Project Facility  
Overview Map

Created by: 

TRC

 5/30/2013  
I.A. - 0047

Data Sources: ESRI, SPECTRA, TRC

T:\PROJECTS\AUGUSTA\SPECTRA\AIM\AIM Project 11x17.mxd







Legend

Meter Station

Compressor Station (C/S)

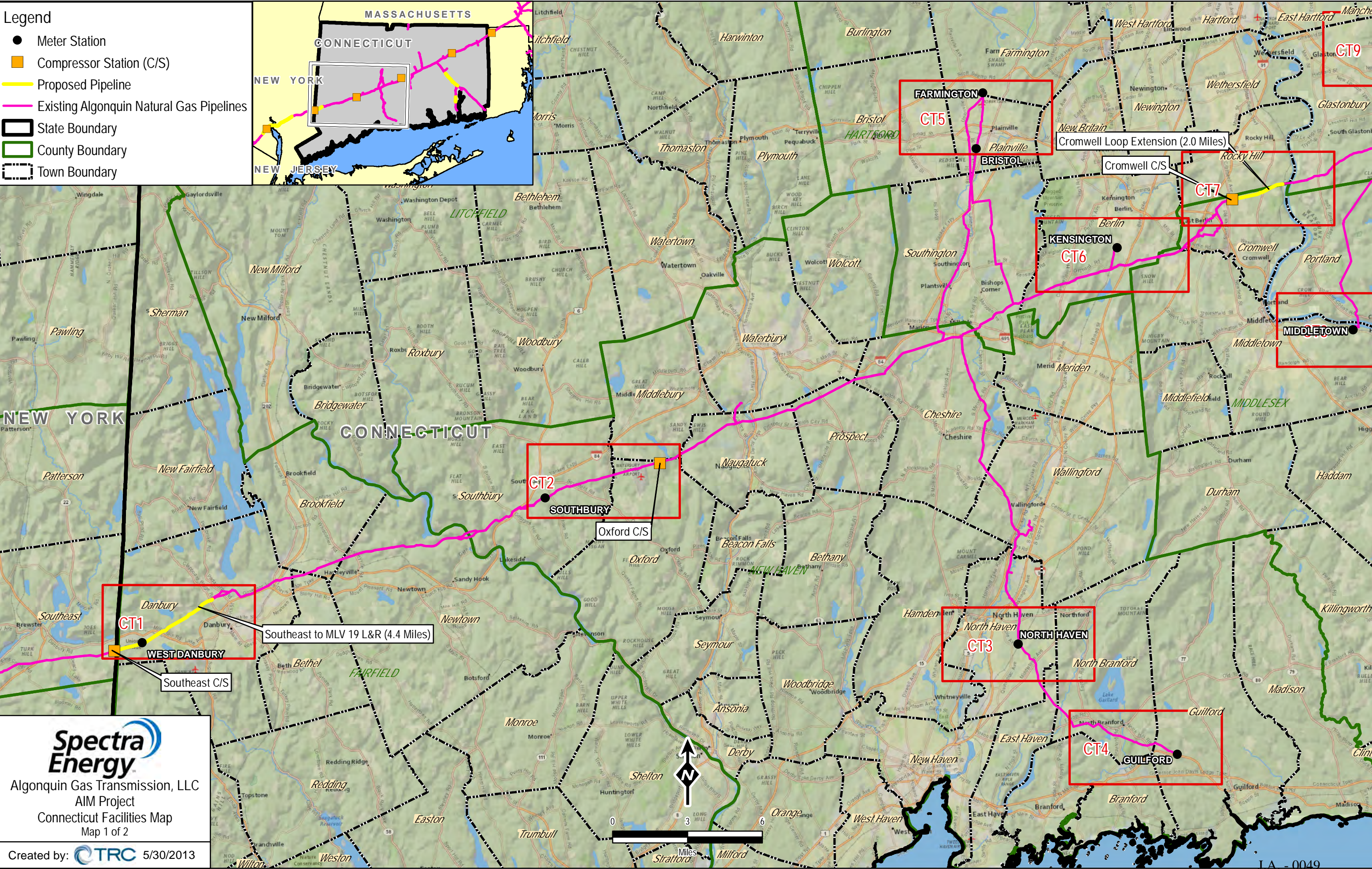
Proposed Pipeline

Existing Algonquin Natural Gas Pipelines

State Boundary

County Boundary

Town Boundary



Spectra Energy

Algonquin Gas Transmission, LLC  
AIM Project  
Connecticut Facilities Map  
Map 1 of 2

Created by: 

TRC

 5/30/2013



Legend

Meter Station

Compressor Station (C/S)

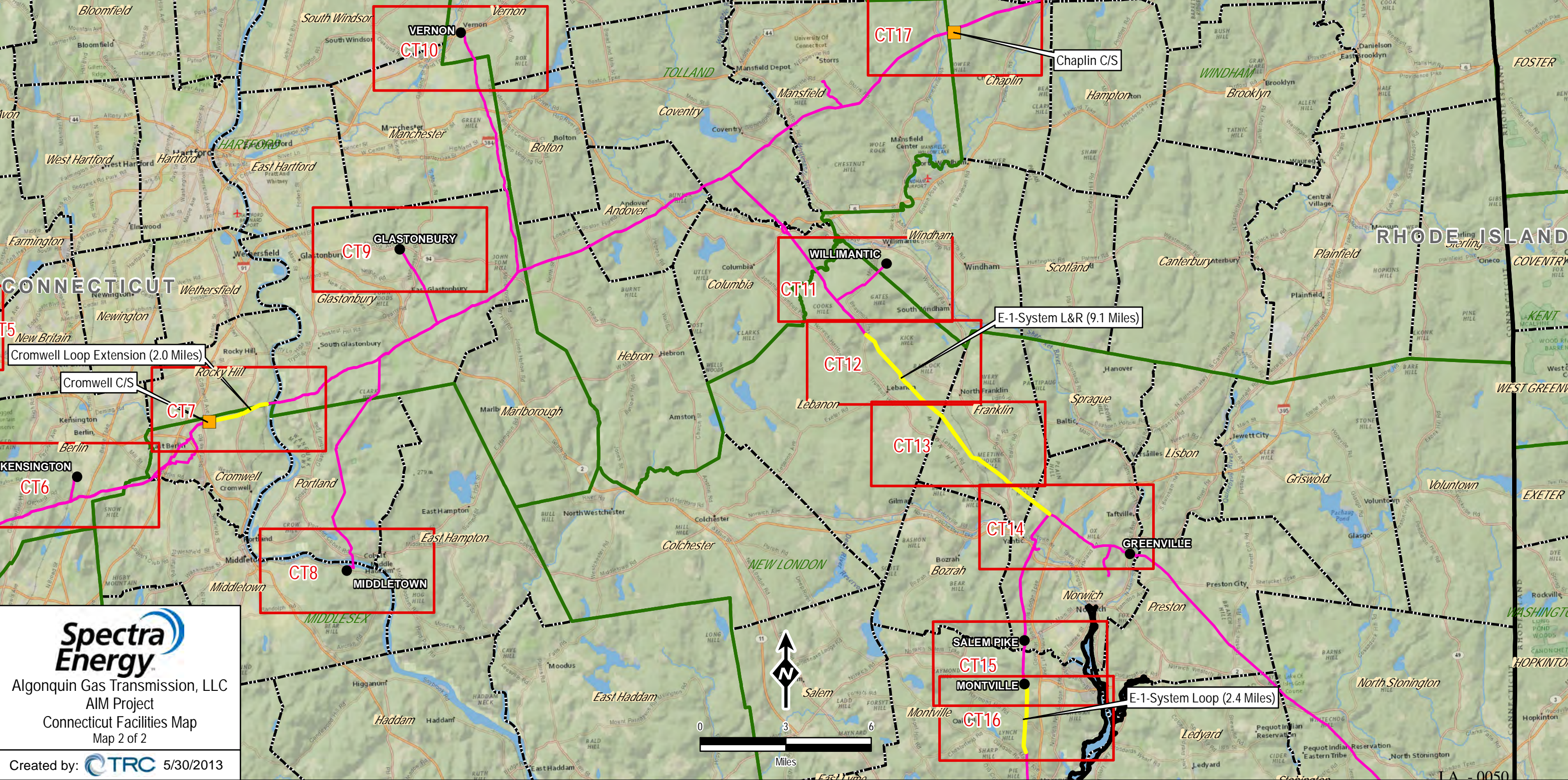
Proposed Pipeline

Existing Algonquin Natural Gas Pipelines

State Boundary

County Boundary

Town Boundary



Spectra

Energy

Algonquin Gas Transmission, LLC

AIM Project

Connecticut Facilities Map

Map 2 of 2

Created by: 

CTRC

 5/30/2013

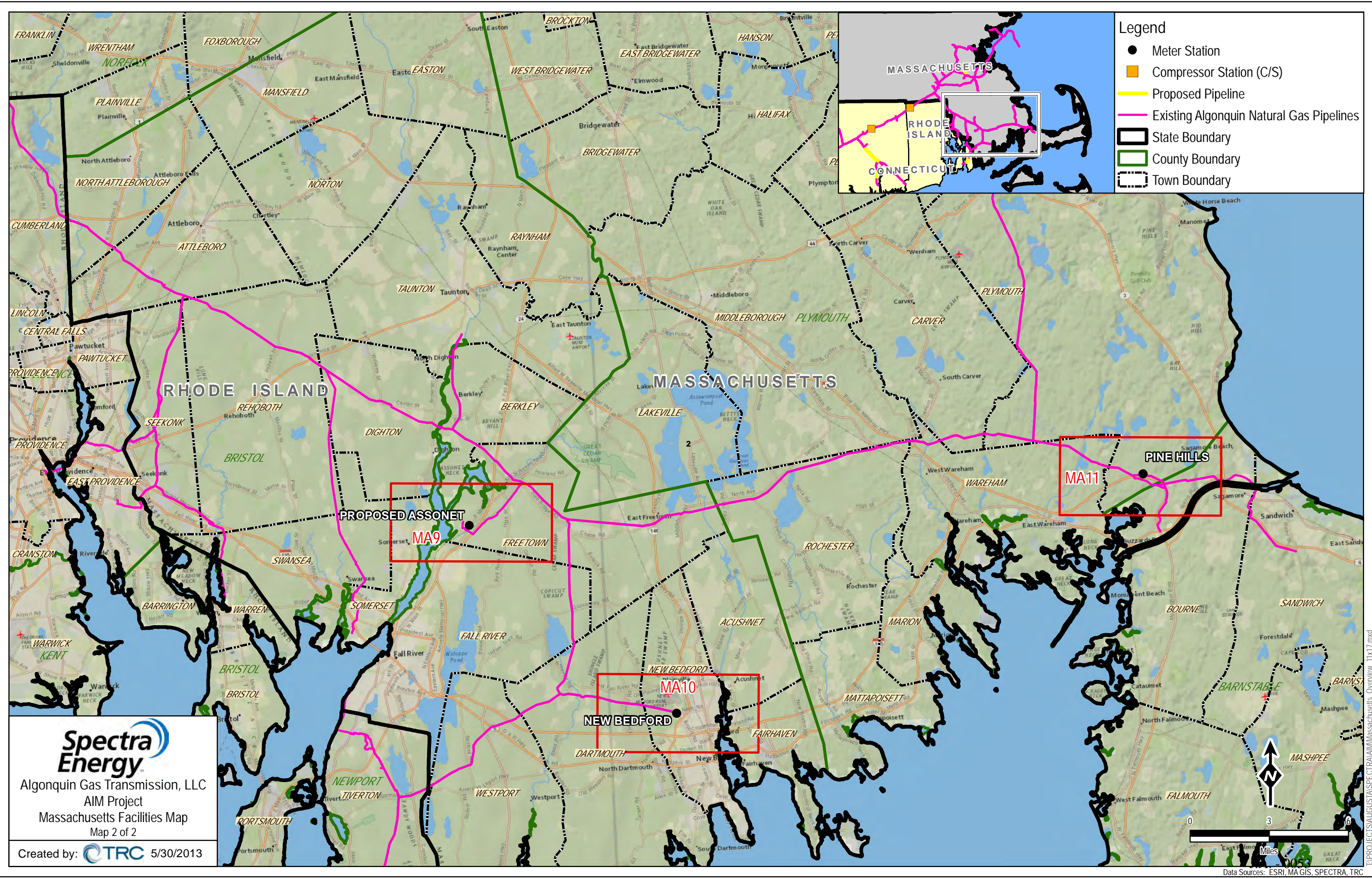












Algonquin Gas Transmission, LLC  
AIM Project  
Massachusetts Facilities Map  
Map 2 of 2

Created by: **TRC** 5/30/2013



Document Content(s)

AIM Pre-Filing Letter_2013-06-18_FINAL.PDF.....	1-46
AIM Project Pre-File Letter - Attachment 1 (Maps).PDF.....	47-53

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:  
OEP/DG2E/Gas 2  
Algonquin Gas Transmission, LLC  
Docket No. PF13-16-000

June 28, 2013  
Berk Donaldson  
Regulatory Affairs  
Director, Rates and Certificates  
Algonquin Gas Transmission, LLC  
5400 Westheimer Court  
Houston, TX 77056-5310

**Re: Approval of Pre-Filing Request: Algonquin Incremental Market Project**

Dear Mr. Donaldson:

Thank you for your letter, filed June 18, 2013, requesting use of the Federal Energy Regulatory Commission's (FERC or Commission) pre-filing review process for Algonquin Gas Transmission, LLC's (Algonquin) planned Algonquin Incremental Market Project. We believe that beginning the Commission's review of these proposals prior to the receipt of your application will greatly improve our ability to identify issues early and address them in our environmental document.

As stated in your letter, Algonquin plans to construct and operate approximately 25.5 miles of 36 to 42-inch diameter mainline pipeline, 18 miles of 12 to 16-inch diameter lateral pipeline, construction at six existing compressor stations totaling 79,780 horsepower of additional compression, and appurtenant facilities in various counties of Connecticut, Massachusetts, Rhode Island, and New York. The additional firm pipeline capacity created by the project would allow Algonquin to deliver up to 433,000 dekatherms per day of natural gas.

Your letter also stated that Algonquin anticipates filing its application no later than February 2014. When Algonquin files its application with the Commission, we will evaluate the progress made during the pre-filing process, based in part on our success in resolving the issues raised during scoping. Once we determine that your application is ready for processing, we will establish a schedule for completion of the environmental document and for the issuance of all other federal authorizations.

- 2 -

My staff has reviewed the proposals submitted for the selection of a third-party contractor to assist us in preparing the National Environmental Policy Act documentation. We have selected Natural Resource Group, LLC (NRG) as the third-party contractor to work under the direct supervision and control of the Commission staff. I request that you proceed with executing a contract with NRG so work may begin as soon as possible.

If you have any questions, please contact the Office of Energy Projects' Environmental Project Manager for your project, Douglas A. Sipe at 202-502-8837, or Maggie Suter at 202-502-6463.

Sincerely,

Jeff C. Wright  
Director  
Office of Energy Projects

cc: Public File, Docket No. PF13-16-000

Document Content(s)

PF13-16-000-62813.DOC.....1-2



# **AIM Project Algonquin Gas Transmission, LLC**

**FERC Section 7(b) and 7(c) Application and  
Public Exhibits, Except F-1**

**FERC Docket No. CP14-\_\_\_\_-000**

**Volume I**

**“PUBLIC”**

**February 2014**



ALGONQUIN GAS TRANSMISSION, LLC  
5400 Westheimer Court  
Houston, TX 77056-5310  
713.627.5400 main

Mailing Address:  
P.O. Box 1642  
Houston, TX 77251-1642



February 28, 2014

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-\_\_\_\_-000  
Abbreviated Application for a Certificate of Public Convenience and Necessity and for  
Related Authorizations

Dear Ms. Bose:

Algonquin Gas Transmission, LLC (~~Algonquin~~) hereby submits for filing with the Federal Energy Regulatory Commission (~~Commission~~) an Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations (~~Application~~) regarding its proposed Algonquin Incremental Market Project (~~AIM Project~~). The AIM Project is designed to enable Algonquin to provide 342,000 dekatherms per day of firm transportation capacity to deliver natural gas to the AIM Project shippers.

Included herewith are four volumes. Volume I contains public information and is comprised of the Application and its public exhibits, except Exhibit F-I. Volume II contains the public version of Exhibit F-I, which is comprised of Volume II-A (resource reports) and Volume II-B (appendices to resource reports). Volume III contains privileged and confidential information and is comprised of Appendices 1D (landowner and stakeholder lists), 4B (archaeological field surveys) and 4C (cultural resources survey reports) of Exhibit F-1, Exhibit I (confidential market information), and proprietary hydraulic flow models. Volume IV contains Critical Energy Infrastructure Information (~~CEII~~) and is comprised of Exhibits G, G-I, and G-II.

Pursuant to the Commission's guidelines for eFiling,<sup>1</sup> Algonquin is hereby eFiling the Application and will provide two complete copies of the Application to OEP Room 62-46 and one complete copy to OGC-EP Room 101-66. Volume IV is marked ~~CONTAINS CRITICAL ENERGY INFRASTRUCTURE INFORMATION—DO NOT RELEASE~~<sup>2</sup> and should be treated as confidential pursuant to Order No. 630, et seq. and is for use by the Commission Staff only and not to be released to the public.<sup>3</sup> Volume III is marked ~~CONTAINS PRIVILEGED~~

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<sup>1</sup> Federal Energy Regulatory Commission Filing Guide/Qualified Documents List (January 2, 2013).

<sup>2</sup> 18 C.F.R. §§ 388.112(b), 388.113 (2013).

<sup>3</sup> *Critical Energy Infrastructure Information*, Order No. 630, FERC Stat. & Reg., ¶ 31,140 (2003), 68 Fed. Reg. 9857 (Mar. 3, 2003), *order on reh'g*, Order No. 630-A, 104 FERC ¶ 61,106 (2003), 68 Fed. Reg. 46456 (Aug. 6, 2003).

Ms. Kimberly D. Bose, Secretary  
February 28, 2014  
Page 2

INFORMATION—DO NOT RELEASE.”<sup>4</sup> Privileged information should be treated as confidential and is for use by Commission Staff only and not to be released to the public. Questions pertaining to confidential information may be submitted to:

Steven E. Hellman  
Associate General Counsel  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642  
Phone: (713) 627-5215  
Fax: (713) 386-4405  
Email: [sehellman@spectraenergy.com](mailto:sehellman@spectraenergy.com)

In accordance with Rule 2011(c)(5) of the Commission’s Rules of Practice and Procedure, 18 C.F.R. § 385.2011(c)(5), I hereby state that I have read the hard copy version of the filing and am familiar with the contents thereof; that the paper copies contain the same information as the disks; and that all of the statements contained therein are true and correct, to the best of my knowledge, information and belief.

If you have any questions regarding this filing, please contact me at (713) 627-4488 or Chris Harvey, Manager, Rates and Certificates at (713) 627-5113.

Sincerely,



Berk Donaldson  
Director, Rates and Certificates

Enclosures

cc: Lauren H. O'Donnell (transmittal letter only)  
Michael J. McGehee (transmittal letter only)  
Douglas A. Sipe (transmittal letter only)  
Magdalene J. Suter

---

<sup>4</sup> 18 C.F.R. §§ 380.12, 388.112 (2013).

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC

)

Docket No. CP14-\_\_\_\_-000

**ABBREVIATED APPLICATION OF  
ALGONQUIN GAS TRANSMISSION, LLC  
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY  
AND FOR RELATED AUTHORIZATIONS**

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC )

Docket No. CP14-\_\_\_\_-000

**ABBREVIATED APPLICATION OF  
ALGONQUIN GAS TRANSMISSION, LLC  
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY  
AND FOR RELATED AUTHORIZATIONS**

Pursuant to Sections 7(b) and 7(c) of the Natural Gas Act (~~–NGA~~”), as amended,<sup>1</sup> and Part 157 of the regulations of the Federal Energy Regulatory Commission (~~–Commission~~”),<sup>2</sup> Algonquin Gas Transmission, LLC (~~–Algonquin~~”) hereby files this abbreviated application for a certificate of public convenience and necessity and for related authorizations (~~–Application~~”) for the Algonquin Incremental Market Project (~~–AIM Project~~” or ~~–Project~~”), including Commission authorizations to (i) construct, install, own, operate and maintain approximately 37.6 miles of take-up and relay, loop and lateral pipeline facilities and related facilities in New York, Connecticut, and Massachusetts; (ii) modify six existing compressor stations in New York, Connecticut and Rhode Island resulting in the addition of 81,620 horsepower (~~–hp~~”) of compression; (iii) modify 24 existing metering and regulating (~~–M&R~~”) stations and construct three new M&R stations; and (iv) abandon certain existing facilities, as more fully described herein. Algonquin also seeks Commission authorization as part of this Application for approval of the *pro forma* tariff records included herewith as part of Exhibit P to establish the initial incremental AIM Project firm transportation rate under Rate Schedule AFT-1,

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<sup>1</sup> 15 U.S.C. §§ 717f(b) and (c) (2013).

<sup>2</sup> 18 C.F.R. § 157.7 (2013).

an incremental fuel percentage applicable to service on the AIM Project, and the initial recourse rates under Rate Schedules AFT-CL and AIT-2 for service on the West Roxbury Lateral (defined below).<sup>3</sup>

The AIM Project is designed to enable Algonquin to provide 342,000 dekatherms per day (–Dth/d”) of firm transportation service from Algonquin’s existing receipt point in Ramapo, New York, to various Algonquin city gate delivery points in Connecticut, Rhode Island and Massachusetts. Algonquin has executed precedent agreements (–Precedent Agreements”) for all of the Project capacity with ten shippers, including eight New England local distribution companies (–LDCs”) and two municipal utilities (collectively, –Project Shippers”).<sup>4</sup> In addition, the AIM Project is expected to alleviate, in part, existing constraints, resulting in increased commodity price competition and reduced gas price volatility in the Northeast markets. Algonquin initiated the Pre-filing review process for the AIM Project in Docket No. PF13-16-000 and received approval from the Commission to use the Pre-filing process on June 28, 2013.<sup>5</sup> The instant Application incorporates the comments and information received during the Pre-filing process from Commission Staff and interested stakeholders.

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<sup>3</sup> The terms –AIM Project” and –AIM Project facilities” in the context of the project facilities refers to all of the facilities to be constructed under the certificate authority requested herein, including the West Roxbury Lateral. In accordance with Algonquin’s tariff, however, the incremental AIM Project rate under Rate Schedule AFT-1 and related AIM Project incremental fuel will be assessed for transportation on the AIM Project facilities excluding the West Roxbury Lateral. Separate recourse rates under Rate Schedules AFT-CL and AIT-2 are applicable to firm or interruptible transportation on the AIM Project’s West Roxbury Lateral facilities.

<sup>4</sup> The Project Shippers are Bay State Gas Company d/b/a Columbia Gas of Massachusetts, Inc., Boston Gas Company d/b/a National Grid, Colonial Gas Company d/b/a National Grid, Connecticut Natural Gas Corporation, Middleborough Gas and Electric, The Narragansett Electric Company d/b/a National Grid, Norwich Public Utilities, NSTAR Gas Company, The Southern Connecticut Gas Company, and Yankee Gas Services Company.

<sup>5</sup> *Algonquin Gas Transmission, LLC*, Approval of Pre-Filing Request, Docket No. PF13-16 (June 28, 2013).

Algonquin requests that the Commission grant the authorizations requested herein on or before January 31, 2015, in order for Algonquin to have the time necessary to complete and place into service the facilities proposed herein by November 1, 2016.<sup>6</sup> The AIM Project requires a two-year construction plan designed to minimize any disruptions to existing shippers and to reduce the potential for supply disruptions to the Northeast gas and electric markets, which are already constrained due to lack of pipeline infrastructure. As such, Algonquin is requesting authorization from the Commission by January 31, 2015, which will allow Algonquin to begin construction in March 2015 in order to complete a portion of the work in 2015 and mitigate construction related outages to existing shippers. A November 1, 2016, in-service date will ensure that the firm transportation service contemplated by this Application is available for the 2016-17 winter heating season which is consistent with the timing contemplated under the Precedent Agreements with the Project Shippers, included herein as Exhibit I, with the extensive work done during the Pre-filing process, and with the timing contemplated in the Project-related approvals obtained by the Project Shippers in their respective state commission and municipal authority processes. Moreover, the timely issuance of the certificate order, enabling a November 1, 2016, in-service date, is essential to meeting the obligations of the Project Shippers to serve the expanding loads within their respective service territories, addressing pipeline infrastructure needs as detailed in state energy plans, and providing reasonably-priced, natural gas supplies to customers in the Northeast.

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<sup>6</sup> In order to construct the AIM Project and meet the agreed-upon in-service date of November 1, 2016, while ensuring adequate capacity is available to meet the contractual commitments with existing firm customers during the lift and relay segments of construction, Algonquin will need to place certain Project facilities in-service as they are completed in late-2015 and early-2016. Algonquin will address the in-service schedule for the Project facilities in the implementation plan that will be filed prior to the commencement of construction.

In support hereof, Algonquin shows as follows:

**I.  
Identity of Applicant**

Algonquin is a limited liability company organized and existing under the laws of the State of Delaware and has its principal place of business at 5400 Westheimer Court, Houston, Texas 77056-5310. Algonquin also has permanent offices in Massachusetts, at 890 Winter Street, Suite 300, Waltham, Massachusetts 02451. Algonquin is an indirect, wholly-owned subsidiary of Spectra Energy Partners, LP.

Algonquin is a ~~“natural gas company”~~ as defined in the NGA, engaged in the transportation of natural gas in interstate commerce subject to the jurisdiction of the Commission. Algonquin owns and operates a natural gas pipeline system extending from points near Lambertville and Hanover, New Jersey, through the states of New Jersey, New York, Connecticut, Rhode Island, and Massachusetts, to points near the Boston area.

The names, titles and mailing addresses of the persons to whom correspondence and communications concerning this Application should be addressed are:

\*Berk Donaldson  
Director, Rates and Certificates  
Chris Harvey  
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\*Steven E. Hellman  
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and

\*Anita R. Wilson  
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\* Algonquin requests that these persons be included on the Commission's official service list.

## **II. Description of Project**

### **A. Overview of Project**

Demand is growing in the Northeast for the increased utilization of natural gas as a source of fuel that is economical, domestically produced, clean-burning and efficient. Certain of the Northeast states, such as Connecticut, have issued comprehensive energy strategies that include specific recommendations for increasing the use of natural gas in their respective states.<sup>7</sup> With more homes and commercial buildings in this region now converting heating units and appliances to natural gas, and the utilization of natural gas for industrial purposes also increasing, demand for natural gas in the region is expected to increase.<sup>8</sup> Additionally, expanding access to the Northeast natural gas markets is critical to eliminate capacity constraints that have contributed to price volatility resulting in natural gas prices in New England that are historically higher than markets elsewhere in North America.

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<sup>7</sup> *2013 Comprehensive Energy Strategy for Connecticut*. ("CES")  
Online: [http://www.ct.gov/deep/lib/deep/energy/cep/2013\\_ces\\_final.pdf](http://www.ct.gov/deep/lib/deep/energy/cep/2013_ces_final.pdf)

<sup>8</sup> As reflected in Resource Report 1 included in Exhibit F-1 hereto, demand for natural gas in New England is projected to increase by 13.5 percent by 2020 (ICF Natural Gas Market Compass, July 2013).



The AIM Project will provide much needed pipeline capacity to meet the Project Shippers' immediate and future needs for natural gas. Specifically, the AIM Project enables Algonquin to provide 342,000 Dth/d of firm transportation capacity to the ten Project Shippers. The AIM Project will utilize a strategic receipt point located at Ramapo, New York, to obtain additional access to growing supply areas, thereby providing the Project Shippers with additional economical supplies of natural gas. Furthermore, adding pipeline capacity along a significant portion of Algonquin's mainline is expected to provide secondary benefits, such as alleviating constraints, resulting in increased commodity price competition and reduced gas price volatility in the region.

Algonquin held open seasons for the AIM Project from December 13, 2010, through February 11, 2011, and from September 20, 2012, through November 2, 2012, and held a supplemental open season and reverse open season from June 11, 2013, through June 25, 2013, as described in Section IV below. Copies of the open season and supplemental open season and reverse open season notices are included in Exhibit Z-1 to this Application.

As a result of the open seasons, Algonquin has executed precedent agreements with the Project Shippers for firm transportation service to deliver new, critically needed natural gas supplies to the Northeast.<sup>9</sup> Each of the Precedent Agreements has been approved by the relevant shipper's state regulatory commissions or has been considered

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<sup>9</sup> The Precedent Agreements are included herewith as Exhibit I and have been submitted as privileged pursuant to Section 388.112 of the Commission's regulations.

in a state regulatory commission hearing or municipal authority process.<sup>10</sup> These proceedings addressed the benefits that the Project will provide as of November 1, 2016, including (i) access to, and reliability of, supply to meet market demand and replace declining supplies from other regions, (ii) eliminating the need for the Project Shippers to rely on higher-cost, spot market purchases, if available,<sup>11</sup> and (iii) enabling the Connecticut Project Shippers to meet the reliability standards in the CES.<sup>12</sup> These Project Shippers' commitments provide the economic underpinning for Algonquin to proceed with the Project.<sup>13</sup> Placing the Project facilities in service by November 1, 2016, will allow the Project Shippers to receive service, as contemplated in the Precedent Agreements for the Project and considered in the state commission proceedings and municipal authority processes, and to meet increased peak demand at the beginning of the 2016-17 winter heating season.

## **B. Description of Facilities**

Algonquin proposes the following activities as part of the AIM Project:

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<sup>10</sup> Boston Gas Co. and Colonial Gas Co. each d/b/a National Grid, MA D.P.U. 13-157 (2014) (~~–National Grid~~); Bay State Gas Co. d/b/a Columbia Gas of Massachusetts, MA D.P.U. 13-158 (2014); NSTAR Gas Co., MA D.P.U. 13-159 (2014); In re: PURA Investigation of Connecticut's Local Distribution Companies' Proposed Expansion Plans to Comply with Connecticut's Comprehensive Energy Strategy, CT PURA 13-06-02 (Nov. 22, 2013) (approving precedent agreements with Connecticut Natural Gas, Southern Connecticut Gas, and Yankee Gas) (~~–PURA Order~~); In re: PURA Investigation of Connecticut's Local Distribution Companies' Proposed Expansion Plans to Comply with Connecticut's Comprehensive Energy Strategy, CT PURA 13-06-02 (Dec. 26, 2013) (approving Yankee Gas's revised capacity plan as complying with the PURA Order); *see also* 2013 Gas Cost Recovery Filing of The Narragansett Electric Company d/b/a National Grid, R.I. Pub. Util. Comm'n, Docket 4436 (Sep. 3, 2013).

<sup>11</sup> *See e.g.*, National Grid at 21-22.

<sup>12</sup> PURA Order at 21.

<sup>13</sup> Agreements for long-term firm capacity are important evidence of market demand for a new project. *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227, at p. 61,744 (1999) (~~–Certificate Policy Statement~~), *order clarifying Statement of Policy*, 90 FERC ¶ 61,128 (2000), *order further clarifying Statement of Policy*, 92 FERC ¶ 61,094 (2000).

### *Pipeline Facilities*

- (i) install approximately 20.1 miles of 42-inch diameter pipeline that will replace certain segments of 26-inch diameter pipeline, including approximately 6.8 miles in Rockland County, New York, approximately 8.8 miles in Westchester County, New York, approximately 0.1 miles in Putnam County, New York and approximately 4.4 miles in Fairfield County, Connecticut (including horizontal directional drills of 0.7 miles crossing the Hudson River and 0.7 miles crossing I-84/Still River);
- (ii) install approximately 2.0 miles of 36-inch diameter pipeline looping in Middlesex and Hartford Counties, Connecticut (Line 36A Loop);
- (iii) install approximately 9.1 miles of 16-inch diameter pipeline that will replace a corresponding segment of 6-inch diameter pipeline on the E-1 System Lateral in New London County, Connecticut (E-1 System Lateral Take-up and Relay);
- (iv) install approximately 1.3 miles of 12-inch diameter pipeline looping in New London County, Connecticut (E-1 System Lateral Loop); and
- (v) construct approximately 4.2 miles of 16-inch diameter pipeline and approximately 0.9 miles of 24-inch diameter pipeline off its existing I-4 System Lateral in Norfolk and Suffolk Counties, Massachusetts (—West Roxbury Lateral”).

### *Modifications to Existing Compressor Stations*

- (i) Stony Point Compressor Station – install two new Solar Mars 100, 15,900 hp natural gas-fired compressor units, restage one existing compressor unit, install gas cooling for the new compressor units and modify station piping at Algonquin’s existing compressor station in the Town of Stony Point, Rockland County, New York;
- (ii) Southeast Compressor Station - install one new Solar Taurus 70, 10,320 hp natural gas-fired compressor unit, restage one existing compressor unit, replace the compressor body of one existing compressor unit, install gas cooling for the new compressor unit and modify station piping at Algonquin’s existing compressor station in the Town of Southeast, Putnam County, New York;
- (iii) Oxford Compressor Station – restage one existing compressor unit at Algonquin’s existing compressor station in the Town of Oxford, New Haven County, Connecticut;
- (iv) Cromwell Compressor Station - install one new Solar Mars 100, 15,900 hp natural gas-fired compressor unit, install gas cooling for the new compressor unit and two existing turbine-driven compressor units, and

modify station piping at Algonquin's existing compressor station in the Town of Cromwell, Middlesex County, Connecticut;

- (v) Chaplin Compressor Station - install one new Solar Taurus 60, 7,700 hp natural gas-fired compressor unit, restage two existing compressor units, install gas cooling for the new compressor unit and two existing compressor units, and modify station piping at Algonquin's existing compressor station in the Town of Chaplin, Windham County, Connecticut; and
- (vi) Burrillville Compressor Station - install one new Solar Mars 100, 15,900 hp natural gas-fired compressor unit, restage two existing compressor units, install gas cooling for the new compressor unit and modify station piping at Algonquin's existing compressor station in the Town of Burrillville, Providence, Rhode Island.

*New Metering and Regulating ("M&R") Stations*

- (i) Oakland Heights M&R Station – construct a new M&R station allowing an interconnection with Norwich Public Utilities in the City of Norwich, New London County, Connecticut;
- (ii) Assonet M&R Station – construct a new M&R station allowing an interconnection with NSTAR Gas Company in the Town of Freetown, Bristol County, Massachusetts; and
- (iii) West Roxbury M&R Station – construct a new M&R station at MP 4.2 of the proposed West Roxbury Lateral pipeline to deliver natural gas to Boston Gas Company in the City of Boston (West Roxbury), Suffolk County, Massachusetts.

*Existing M&R Station Modifications*

The AIM Project will include modifications to 24 existing Algonquin M&R stations in New York, Connecticut and Massachusetts, to accept the new gas flows associated with the AIM Project. Three M&R stations are located in New York, 14 are located in Connecticut and eight are located in Massachusetts. The types of modifications will include the replacement of existing heaters and metering facilities, piping modifications, and facility uprates. One existing M&R station will be removed in the City of Norwich, New London County, Connecticut (Greenville).

*Other New Aboveground Facilities*

- (i) Removal of launcher/receiver facilities and installation of new piping at existing Main Line Valve (–MLV”) 13B at MP 0.0 (Haverstraw to Stony Point Take-up and Relay) in Rockland County, New York;
- (ii) Installation of a new 42-inch MLV cross over piping and a 26-inch launcher facility at MP 2.60 (Stony Point to Yorktown Take-up and Relay) in Rockland County, New York;
- (iii) Installation of a new 42-inch MLV, cross over piping and a 26-inch receiver facility at MP 5.48 (Stony Point to Yorktown Take-up and Relay) in Westchester County, New York;
- (iv) Replace the existing 26-inch valve with a 42-inch valve equipped with Remote Control Valve (RCV) capability and install cross over piping at existing MLV 15 at MP 11.0 (Stony Point to Yorktown Take-up and Relay) in Westchester County, New York;
- (v) Install a 42-inch receiver barrel and a 26-inch launcher barrel, pressure regulating facilities and associated cross-over piping at MP 12.3 (Stony Point to Yorktown Take-up and Relay) in Westchester County, New York;
- (vi) Install a new 42-inch mainline valve with suction and discharge valves at the Southeast Compressor Station MP 0.0 (Southeast to MLV 19 Take-up and Relay) along with a new 42-inch launcher barrel assembly, Putnam County, New York;
- (vii) Replace the existing 26-inch valve with a 42-inch valve equipped with Remote Control Valve (RCV) capability, install a 26-inch launcher barrel and install a 42-inch receiver barrel. Also, install pressure regulating facilities and associated cross-over piping at existing MLV 19 at MP 4.4 (Southeast to MLV 19 Take-up and Relay) in Fairfield County, Connecticut;
- (viii) Install a receiver facility, cross over piping at MP 2.0 (Cromwell Line-36A Loop Extension) in Hartford County, Connecticut;
- (ix) Removal of the existing 6-inch launcher assembly and install new piping at the existing facility on the 16-inch E-1 Lateral at MP 0.0 (E-1 System Lateral Take-up and Relay) in the Town of Lebanon, New London County, Connecticut;
- (x) Install a 16-inch receiver facility and 6-inch launcher facility and valve assembly at a new launcher/receiver facility at the end of 16-inch E-1 Lateral at MP 9.1 in the Town of Franklin, New London County, Connecticut;

- (xi) Removal of the 12-inch receiver facility and interconnect with E-1 Lateral at MP 0.0 (E-1 System Lateral Loop) in the Town of Montville, New London County, Connecticut;
- (xii) Install a 12-inch receiver facility and interconnect with E-1 Lateral at MP 1.3 (E-1 System Lateral Loop) in the Town of Montville, New London County, Connecticut;
- (xiii) Install 16-inch launcher barrel and associated lateral valves at the new West Roxbury Lateral Launcher Facility at MP 0.0 (West Roxbury Lateral) in the Town of Westwood, Norfolk County, Massachusetts; and
- (xiv) Install 16-inch receiver, 24-inch launcher and associated lateral valves at the new West Roxbury Meter Station Facility at MP 4.2 (West Roxbury Lateral) in the City of Boston, Suffolk County, Massachusetts.

The AIM Project utilizes, to the maximum extent possible, existing facility locations and existing right-of-way (“ROW”) along the Algonquin system. The location and design of the facilities proposed in this Application are more fully described in Exhibits F, F-1, and G through G-II of this Application.

Algonquin requests that the Commission grant the authorizations requested herein on or before January 31, 2015, in order for Algonquin to have the time required, consistent with a two-year construction plan designed to minimize any disruptions to existing shippers, to complete and place into service the facilities proposed herein by November 1, 2016. A November 1, 2016, in-service date will ensure that the firm transportation service contemplated by this Application is available for the 2016-17 winter heating season and is consistent with the timing contemplated under the Precedent Agreements. Algonquin requests that the Commission grant any other authorizations and waivers necessary to implement the proposal contained herein.

### **III.**

#### **Evaluation of Application Pursuant to Certificate Policy Statement**

The Commission established criteria in the Certificate Policy Statement for determining whether there is a need for a proposed project and whether the proposed

project will serve the public interest.<sup>14</sup> The Certificate Policy Statement explains that, in deciding whether to authorize the construction of major new pipeline facilities, the Commission balances the public benefits of the project against the project's potential adverse consequences.<sup>15</sup> The Commission's stated goal in evaluating new pipeline construction is to give appropriate consideration to the enhancement of the competitive transportation alternatives, the possibility of over-building, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain.<sup>16</sup> Once the applicant demonstrates that the benefits to be achieved by the project will outweigh the potential adverse effects, the Commission will find that the project is required by the public convenience and necessity.<sup>17</sup> As demonstrated herein, the proposed facilities meet the criteria of the Certificate Policy Statement, and approval of the Project will serve the public interest and is required by the public convenience and necessity.

**A. The AIM Project Meets the Threshold No-Subsidy Test.**

The AIM Project satisfies the economic threshold requirement for existing pipelines because it avoids subsidization by Algonquin's existing customers and does not adversely impact their rates. Specifically, Algonquin is proposing herein an initial incremental recourse rate and an incremental fuel percentage for firm transportation service on the AIM Project, as well as recourse rates for firm and interruptible transportation on the West Roxbury Lateral. Because Algonquin is proposing to recover

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<sup>14</sup> *Id.* at p. 61,745-46.

<sup>15</sup> *Tennessee Gas Pipeline Co.*, 92 FERC ¶ 61,142, pp. 61,519-20 (2000).

<sup>16</sup> *Id.*

<sup>17</sup> Certificate Policy Statement at p. 61,746.

the costs associated with the AIM Project facilities through the incremental recourse rate for service on the mainline facilities and through the recourse rates for service on the new lateral, the AIM Project is financially viable without adverse rate effects on, or subsidies from, Algonquin's existing customers. Accordingly, the AIM Project meets the threshold requirement established by the Commission's Certificate Policy Statement.<sup>18</sup> While Algonquin is not seeking approval at this time to roll-in the costs of the Project, Algonquin reserves its right to do so in the future as part of a general rate case proceeding.

**B. The AIM Project Will Not Have Adverse Effects on Existing Customers or on Existing Pipelines and Their Captive Customers.**

The next step in the Certificate Policy Statement analysis is to identify potentially adverse effects of the project on the existing customers of the pipeline proposing the project, existing pipelines in the market and their captive customers, or landowners and communities affected by the new construction and to determine whether the applicant has made efforts to eliminate or minimize those adverse effects.<sup>19</sup> If residual adverse effects on these groups are identified after efforts have been made to minimize them, the Commission will evaluate the project by balancing the evidence of public benefits to be achieved against the residual adverse effects.”<sup>20</sup>

Since Algonquin is proposing an incremental recourse rate, incremental fuel for the Project and initial recourse rates for the West Roxbury Lateral, the AIM Project will not cause or result in a degradation of service to existing customers, nor, as explained above, adversely impact rates of existing customers. The Project is designed to provide

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<sup>18</sup> *Id.* at p. 61,745.

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*



additional firm pipeline capacity to deliver natural gas to New England to meet immediate and future supply and load growth requirements of the Project Shippers, all of which are existing customers of Algonquin. In addition, the increased access to supply, even on a secondary basis, is expected to benefit existing customers and Northeast markets by alleviating constraints, resulting in increased commodity price competition and reduced gas price volatility in the region. Also, the incremental facilities and upgrades that are proposed under the Project will increase overall Algonquin system flexibility and reliability. Accordingly, the AIM Project will not have an adverse effect on existing customers.

Moreover, the AIM Project will increase firm capacity to the Project Shippers' city gate delivery points to accommodate increasing demand. The Project is not designed to bypass an existing pipeline nor to provide service that is already provided by another pipeline. Instead, the Project offers new transportation capacity for incremental demand and will not adversely affect existing pipelines or their customers. For the foregoing reasons, the AIM Project will not have adverse effects on existing customers or existing pipelines and their customers.

**C. Algonquin Has and Continues to Minimize the Potential for Adverse Impacts on Landowners and Communities Affected by the AIM Project.**

As demonstrated in the accompanying Resource Reports, Algonquin has made substantial efforts to ensure that the construction of the AIM Project will have limited residual adverse impacts to landowners and the environment. To the extent practicable, Algonquin will construct the facilities utilizing existing ROW and previously disturbed property, thereby limiting any new disturbances to the environment during construction. Approximately 92 percent of the proposed pipeline facilities involve take-up and relay

and looping that occur within or adjacent to existing ROW, including Algonquin pipeline ROW, public roadways, railways and/or other utility ROW. Similarly, modifications at 21 of the 24 existing M&R stations are minor in nature and will take place within the existing fenced facilities.

Consistent with the Commission's desire for early input by potential stakeholders and with the Commission's endorsement of the use of collaborative procedures in developing new pipeline projects, Algonquin has made significant efforts prior to and throughout the pre-filing process initiated in June 2013 in Docket No. PF13-16-000, to inform the public, particularly affected landowners, relevant resource agencies, and other interested stakeholders about the AIM Project. A list of the federal, state and local agencies and environmental groups that Algonquin has consulted in developing the AIM Project is contained in Exhibit J and Resource Report No. 1 of Exhibit F-1 to this Application.

Algonquin will provide timely written notice of this Application and other required information to landowners that are directly affected by the Application, as well as to local communities and local, state, and federal governments and agencies involved in the AIM Project in accordance with the Commission's landowner notification requirements.<sup>21</sup>

The AIM Project will have limited residual impacts on landowners and communities affected by the Project. Algonquin will construct the AIM Project utilizing proven construction techniques and mitigation procedures, and the Project will not result

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<sup>21</sup> See 18 C.F.R. § 157.6(d)(2)(iii) (2013). In accordance with the Commission's regulations, Algonquin will also publish notice of the Application in relevant daily and/or weekly newspapers of general circulation. In addition, Algonquin will place a copy of the Application in the town or city hall and library of each municipality along the proposed route, thereby exceeding the Commission's requirements. 18 C.F.R. § 157.10.

in significant impacts to the environment. The Resource Reports included in Exhibit F-1 provide a detailed explanation of the limited environmental impacts associated with the AIM Project and the measures that Algonquin intends to take to mitigate such impacts.

**D. The Benefits of the AIM Project Outweigh Potential Residual Adverse Effects.**

When determining whether a proposed project is needed and will serve the public interest, the Commission balances the public benefits to be achieved by the project against the residual impacts of the proposed project on the relevant interests listed above. Given Algonquin's mitigation efforts, and the limited residual impacts on the relevant interests listed above, the benefits of the AIM Project far outweigh any potential adverse effects.

Algonquin designed the AIM Project to provide incremental firm natural gas transportation capacity to meet the load growth demands of the Project Shippers. The Project offers cost-effective and reliable transportation service to meet this demand. In addition, the AIM Project is expected to alleviate in part existing constraints, resulting in increased commodity price competition and reduced gas price volatility in the Northeast markets.

**E. The AIM Project Is Required by the Public Convenience and Necessity.**

The AIM Project is consistent with the criteria of the Certificate Policy Statement, and the construction and operation of the facilities proposed herein are in the public interest and required by the public convenience and necessity. The AIM Project will provide numerous benefits to the Project Shippers, existing shippers, markets along the system and natural gas consumers, including:

- (i) providing long-term, secure firm transportation service to the Project Shippers;

- (ii) providing Project Shippers with access to diverse supply in order to promote stability, reliability and the better management of price volatility;
- (iii) providing new capacity that can be utilized by other Algonquin shippers on a secondary and interruptible basis and through capacity release to meet the increasing natural gas demand in the Northeast markets;
- (iv) reducing existing constraints, resulting in increased commodity price competition and reduced price volatility; and
- (v) providing improved operational reliability.

For the foregoing reasons, Algonquin respectfully submits that granting the authorizations requested herein is required by the public convenience and necessity. Commission approval of the AIM Project in the timeframe requested herein will benefit the Northeast markets by providing Project Shippers enhanced access to diverse supplies of natural gas in a timely manner.

In summary, the AIM Project satisfies the Commission's Certificate Policy Statement and is consistent with the Commission's economic and environmental goals. Algonquin will construct the Project with minimal landowner and environmental impacts. As described in detail in this Application and the accompanying exhibits, the AIM Project significantly and substantially expands the natural gas transmission grid in the Northeast and will provide the pipeline capacity necessary to transport the natural gas supplies necessary to meet the Project Shippers' demand. The benefits of this Project far outweigh the potential residual impacts of the Project, which have been or will be mitigated through Algonquin's efforts as described in this Application. Accordingly, the AIM Project meets the standards of the Certificate Policy Statement, is in the public interest, and is required by the public convenience and necessity.

#### **IV. Open Seasons**

In compliance with the Commission's policy and precedent, Algonquin conducted open seasons to solicit interest for incremental service as part of the AIM Project, and a reverse open season to determine the appropriate design and size of the Project.

To determine whether demand existed for firm service as part of the AIM Project, Algonquin held open seasons for the Project from December 13, 2010, through February 11, 2011, and from September 20, 2012, through November 2, 2012. Based on the bids received in these open seasons, Algonquin determined to move forward with the AIM Project and executed precedent agreements for service on the Project.

Algonquin held a supplemental open season and reverse open season from June 11, 2013, through June 25, 2013, to solicit bids for additional capacity and for the release of existing firm transportation entitlements to reduce the scope of the Project facilities. Based on the additional commitments received, Algonquin revised the scope of the Project to the current design capacity of 342,000 Dth/day and executed additional precedent agreements. In response to the reverse open season, Algonquin executed agreements with two existing customers to turnback 12,000 Dth/d of existing capacity on the Algonquin system.

#### **V. Environmental Impact**

The Resource Reports included herewith more fully describe the potential environmental impacts of the AIM Project. The information provided in the Resource Reports has been prepared in accordance with Part 380 of the Commission's regulations

for the Commission Staff to conduct its environmental analysis of the Project in this proceeding.

As the Resource Reports show, the environmental impact associated with the construction of the AIM Project can be adequately mitigated. Algonquin has incorporated the Commission's *Upland Erosion Control, Revegetation and Maintenance Plan* and the Commission's *Wetland and Waterbody Construction and Mitigation Procedures* (January 17, 2003 versions of both) into the Erosion and Sediment Control Plan to be used in this proposal. In addition, Algonquin will incorporate standard environmental mitigation measures into its construction specifications.

The Resource Reports demonstrate that (i) any adverse impacts associated with the AIM Project can be adequately mitigated or avoided, (ii) the proposed action is the best alternative, (iii) the short-term use of the environment will not conflict with the long-term productivity, and (iv) significant resources will not be irreversibly or irretrievably lost due to the construction activities. Under these circumstances, approval of the proposed facilities described herein will not be a major federal action significantly affecting the quality of the human environment.

The AIM Project will be constructed in accordance with applicable environmental permits, approvals and regulations. Algonquin is committed to minimizing the environmental impact of the Project and to reclaiming all disturbed areas to a consistently high standard, regardless of land ownership. Algonquin will work diligently to ensure that any questions related to the environmental aspects of the AIM Project are resolved promptly and completely and that the facilities are constructed in an efficient and appropriate manner. In addition, and consistent with the Commission's desire for early input by potential stakeholders, Algonquin has made significant efforts throughout the

Pre-filing process in Docket No. PF13-16-000 to inform the public, particularly landowners, relevant resource agencies, and other interested stakeholders, about the AIM Project.

The construction activities are not anticipated to have adverse effects on residences or industrial areas. The construction activities will not have a negative impact on public, recreational, or scenic areas, and the impact on vegetation, wildlife, and cultural resources will be limited. As described in the Resource Reports, Algonquin will, to the extent practicable, utilize existing right-of-way to install new pipeline and for the above-ground facility modifications.

## **VI. Supply**

Algonquin's shippers are responsible for obtaining the gas supplies to be transported on Algonquin's pipeline system. Algonquin proposes to provide only open-access transportation service for the facilities proposed herein.

## **VII. Rates and Tariff**

Algonquin is proposing to charge an initial incremental recourse rate under Rate Schedule AFT-1 for firm service on the AIM Project commencing on the in-service date of the Project. In addition, Algonquin is proposing to charge recourse rates under Rate Schedules AFT-CL and AIT-2 for service on the West Roxbury Lateral. The Commission has previously approved initial rates for service on new discrete lateral facilities under Rate Schedule AFT-CL under similar circumstances.<sup>22</sup> These rates and the support for the derivation of these rates are set forth in Exhibit P to this Application.

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<sup>22</sup> See, e.g., *Algonquin Gas Transmission Co.*, 88 FERC ¶ 62,140 (1999) (Lake Road Lateral); 83 FERC ¶ 61,200 (1998) (ANP Lateral); 81 FERC ¶ 61,220 (1997) (Middletown Lateral); 81 FERC ¶ 61,019 (1997) (Taunton Lateral); 71 FERC ¶ 61,069 (1995), *as amended*, 75 FERC ¶ 61,284 (1996) (Canal Lateral).



As reflected on the *pro forma* tariff records attached hereto as part of Exhibit P, the incremental recourse reservation rate is \$42.575 per month per Dth of capacity subscribed, with respect to firm service on the AIM Project.<sup>23</sup> Algonquin proposes to charge its system interruptible transportation rate for interruptible service on the AIM Project.<sup>24</sup> Algonquin proposes to implement an initial West Roxbury Lateral firm reservation rate of \$18.198 per month per Dth, as well as an initial interruptible rate of \$0.598 per Dth, based on a 100% load factor of the firm rate on the West Roxbury Lateral.

As shown in Exhibit P, Algonquin has utilized its system depreciation rate of 1.81 percent in deriving the AIM Project incremental recourse rate. In addition, Algonquin has utilized a depreciation rate of 6.67 percent in deriving the initial recourse rates for the West Roxbury Lateral. The proposed initial recourse rates for the service on the West Roxbury Lateral are based on an estimated total facility cost of approximately \$95 million, and rate determinants of 100,000 Dth.

Algonquin proposes to recover incremental fuel use and lost and unaccounted for fuel (“LAUF”) on the AIM Project through its fuel retention percentages. The incremental fuel derivation is shown on Exhibit Z-2. Consistent with the Commission’s

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<sup>23</sup> Algonquin requests that the Commission not pre-judge the merits, nor foreclose the possibility, of a future request by Algonquin for rolled-in treatment. *See Texas Eastern Transmission, LP*, 129 FERC ¶ 61,151 (2009) (acknowledging that Texas Eastern had “not sought to roll in the project costs” and holding that “if in the future Texas Eastern seeks to roll in the costs associated with the project, it must demonstrate that such roll-in will not result in any subsidization by existing customers”); *Maritimes & Northeast Pipeline, L.L.C.*, 95 FERC ¶ 61,077 at p. 61,227 (2001) (noting that Maritimes would have the burden of proof to establish rolled-in rates during its next rate case).

<sup>24</sup> *See Texas Eastern Transmission, LP, et al.*, 139 FERC ¶ 61,138 at P 31 (2012) (stating that “Commission policy is to require a pipeline to charge its current system IT rate for any interruptible service rendered on additional capacity made available as a result of an incremental expansion that is integrated with existing pipeline facilities.”).

policy and precedent,<sup>25</sup> Algonquin proposes to track changes in fuel for this incremental service through its FRQ mechanism set forth in Section 32 of the General Terms and Conditions in Algonquin's FERC Gas Tariff (~~GT&C~~). Algonquin will adjust its periodic tracker mechanisms to ensure that existing customers do not subsidize the costs resulting from these new incremental services.

Algonquin will provide services to the Project Shippers at negotiated rates in accordance with the negotiated rate authority set forth in GT&C Section 46 and pursuant to the terms of the negotiated rate agreements. The agreements include a provision to adjust the negotiated rates to reflect the final capital cost of the Project facilities, a most favored nations provision and a contractual right of first refusal. Algonquin will file tariff records reflecting its negotiated rate agreements with the Project Shippers within 30 to 60 days prior to when the underlying negotiated rates are proposed to become effective.

#### **Service Agreement Extension**

In addition to the proposed negotiated rates described above, Algonquin agreed to extension rights with certain Project Shippers. The Commission has accepted such extension rights in previous proceedings.<sup>26</sup>

#### **AFUDC Representation**

Algonquin hereby provides its statement representing that the Allowance for Funds Used During Construction (~~AFUDC~~) accruals included in the cost of the AIM Project, reflected in Exhibit K hereto, are in compliance with the Commission's policy on

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<sup>25</sup> See *Algonquin Gas Transmission, LLC*, 117 FERC ¶ 61,319, P 91 (2006).

<sup>26</sup> See *Ruby Pipeline, LLC*, 128 FERC ¶ 61,224 at P 78 (2009) (approving renewal rights negotiated with shippers); *Rockies Express Pipeline LLC*, 116 FERC ¶ 61,272 at PP 23, 72 (2006) (approving ~~rate~~ and contractual offerings that are based on a shipper's status" as an anchor shipper, including rollover rights).

AFUDC accruals as set forth in the AD10-3-000 proceeding.<sup>27</sup> Algonquin began accruing AFUDC for the AIM Project on May 17, 2013, and in accordance with the Commission's AFUDC policy, Algonquin hereby affirms that it had begun to incur capital expenditures for the Project on that date and those activities necessary to prepare the Project for its intended use were in progress at that time.

### **VIII. Other Applications**

With the exception of the instant Application, Algonquin knows of no other applications pending or required before the Commission under the NGA for the proposed AIM Project. Algonquin will require other federal, state, and local authorizations for the facilities proposed herein, in addition to the authorizations requested in this Application. Algonquin is working with a number of federal, state, and local agencies to obtain permits, as necessary, to complete the construction of the Project. Algonquin has included, in Exhibit J and as part of Resource Report No. 1, a list of all required permits and certificates to construct the facilities proposed in this Application and the agencies in which the application for such permits or certificates was filed or is expected to be filed.

### **IX. Notice**

A form of Notice suitable for publication in the *Federal Register* is attached hereto.

### **X. Exhibits**

This is an abbreviated application filed pursuant to Section 157.7 of the Commission's regulations under the NGA, pursuant to which Algonquin has omitted the

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<sup>27</sup> *Southern Natural Gas Co., et al.*, 130 FERC ¶ 61,193 (2010); *see also Texas Eastern Transmission, LP*, 131 FERC ¶ 61,164 (2010).

exhibits and data that are inapplicable or are unnecessary to disclose fully the nature and extent of the proposal herein. A list of the exhibits and documents filed with this Application, which are incorporated by reference as if set forth fully herein, or which have been omitted for the reasons set forth below, is as follows:

- |             |  |
|-------------|--|
| Exhibit A   | <u>Articles of Incorporation</u><br>Omitted. Exhibit A has been filed in Docket No. CP06-76-000 and is incorporated herein by reference.   |
| Exhibit B   | <u>State Authorization</u><br>Attached hereto is the information related to Algonquin's authority to do business in the State of Maine. Exhibit B has been filed in Docket Nos. CP08-462-000 with respect to the authority to do business in the State of Texas and CP06-76-000 for each other state in which it has authority to do business and such exhibits are incorporated herein by reference.  |
| Exhibit C   | <u>Company Officials</u><br>Attached.  |
| Exhibit D   | <u>Subsidiaries and Affiliates</u><br>Omitted. Exhibit D has been filed in Docket No. CP08-256-000 and is incorporated herein by reference.  |
| Exhibit E   | <u>Other Pending Applications and Filings</u><br>Omitted. This information is contained in Section VIII of this Application.   |
| Exhibit F   | <u>Location of Facilities</u><br>Attached.   |
| Exhibit F-I | <u>Environmental Report</u><br>Attached hereto in Volumes II through IV. Resource Report Nos. 1 through 12 as specified in Sections 380.3 and 380.12 of the Commission's regulations are included herewith. Appendices from Resource Report No. 1 (landowner information) and Resource Report No. 4 (cultural resource assessment) have been segregated and bound separately in Volume III and are labeled "Contains Privileged Information—Do Not Release." |

Exhibits G through G-II	<p><u>Flow Diagrams and Flow Diagram Data</u></p> <p>Attached hereto as part of Volume IV and marked “Contains Critical Energy Infrastructure Information—Do Not Release.”</p>
Exhibit H	<p><u>Total Gas Supply</u></p> <p>Omitted. This information is contained in Section VI of this Application.</p>
Exhibit I	<p><u>Market Data</u></p> <p>Enclosed herewith under seal as part of Volume III and marked “Contains Privileged Information—Do Not Release.” This exhibit includes copies of the Precedent Agreements between Algonquin and the Project Shippers.</p>
Exhibit J	<p><u>Other Federal Authorizations</u></p> <p>Attached. This exhibit identifies the following: each federal authorization that the Project will require; the federal or state agency or officer that will issue each required authorization; the date each request for authorization was submitted; why any request was not submitted and the date submission is expected; and the date by which final action on each federal authorization has been requested or is expected.</p>
Exhibit K	<p><u>Cost of Facilities</u></p> <p>Attached.</p>
Exhibit L	<p><u>Financing</u></p> <p>Omitted. As currently structured, Algonquin will finance the costs of the AIM Project through funds on hand and borrowings under short-term financing arrangements but Algonquin is also considering other financing and ownership options. To the extent that it implements any other arrangement, Algonquin will update its application to reflect specific information.</p>
Exhibit M	<p><u>Construction, Operation and Maintenance</u></p> <p>Omitted. Algonquin will construct or cause the proposed facilities to be constructed, and will manage and operate the proposed facilities.</p>
Exhibit N	<p><u>Revenues, Expenses and Income</u></p> <p>Omitted. This information is included in Exhibit P.</p>

Exhibit O	<p><u>Depreciation and Depletion</u></p> <p>Algonquin will use its system depreciation rate of 1.81 % for the AIM Project facilities. The justification for the depreciation rate of 6.67 % for the West Roxbury Lateral facilities is attached hereto.</p>
Exhibit P	<p><u>Tariff and Rates</u></p> <p><i>Pro forma</i> tariff records setting forth the proposed initial incremental recourse rate and lateral rates, as well as other terms and conditions of service on the AIM Project facilities are included herewith. In addition, Exhibit P includes the support schedules for the derivation of such initial recourse rates.</p>
Exhibit T	<p><u>Related Applications</u></p> <p>Attached.</p>
Exhibit U	<p><u>Contracts and Other Agreements</u></p> <p>Omitted. No contracts or other agreements pertain to the abandonment of the facilities proposed herein.</p>
Exhibit V	<p><u>Flow Diagram after Abandonment</u></p> <p>Attached hereto in Volume IV as Exhibits G through G-II and marked “Contains Critical Energy Infrastructure Information—Do Not Release.”</p>
Exhibit W	<p><u>Impact on Customers</u></p> <p>Omitted. No service to customers will be terminated by the abandonment of the facilities proposed herein.</p>
Exhibit X	<p><u>Effect on Existing Tariffs</u></p> <p>Omitted. No effect upon any of the rate schedules or tariff on file with the Commission for Algonquin will occur from granting the proposed abandonment.</p>
Exhibit Y	<p><u>Accounting Treatment of Abandonment</u></p> <p>Attached.</p>
Exhibit Z-1	Open Season and Supplemental Open Season and Reverse Open Season Notices
Exhibit Z-2	Incremental Fuel Derivation

Exhibit Z-3	Form of Protective Agreement <sup>28</sup>
Exhibit Z-4	Matrix of Information Incorporated into Resource Reports Based on Commission Staff Comments

## **XI. Other**

Algonquin requests that the Commission grant this Application in accordance with the shortened procedures set forth in Rules 801 and 802 of the Commission's Rules of Practice and Procedure. Also, if the Commission utilizes the shortened procedures, Algonquin requests that the intermediate decision procedure be omitted and waives oral hearing and opportunity for filing exceptions.

Exhibits G through G-II, as well as parts of Exhibit F-I, are found in Volume IV and contain Critical Energy Infrastructure Information regarding system pressure and flow. Pursuant to Section 388.112 of the Commission's regulations, Algonquin hereby requests privileged treatment of these exhibits, which are marked as "Contains Critical Energy Infrastructure Information—Do Not Release." In addition, Algonquin is marking Volume III as privileged because it contains cultural resource location information and landowner information from Exhibit F-I, confidential agreements representing market data from Exhibit I, and confidential hydraulic models supporting Exhibits G through G-II.<sup>29</sup> Algonquin requests privileged treatment for this volume and has marked it "Contains Privileged Information—Do Not Release." Algonquin has also submitted herewith the Form of Notice of this Application.

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<sup>28</sup> See 18 C.F.R. § 388.112(b)(2)(i).

<sup>29</sup> The hydraulic models supporting Exhibits G through G-II are available only in electronic form in WFP format. The hydraulic flow models also contain CEII.



**XII.**  
**Summary of Authorizations Requested**

WHEREFORE, Algonquin respectfully requests that for the reasons set forth herein, the Commission review this Application and issue a final certificate of public convenience and necessity approving the Project as described herein without condition or modification, and approving, authorizing and/or granting Algonquin:

- (i) a certificate of public convenience and necessity to construct, install, own, operate and maintain the facilities, as proposed herein;
- (ii) authorization to abandon by removal certain facilities, as proposed herein;
- (iii) authorization to charge the initial incremental recourse rate and an incremental fuel percentage for firm service on the AIM Project, excluding the West Roxbury Lateral, and existing system recourse rates for interruptible service on such facilities;
- (iv) authorization to charge the initial firm recourse rate and interruptible rate for firm and interruptible service, respectively, on the West Roxbury Lateral; and
- (v) any waivers, authority, and further relief as may be necessary to implement the proposal contained herein.

Algonquin respectfully requests that the Commission issue an order authorizing the requested activities on or before January 31, 2015. Algonquin submits that this schedule for approval of the Application is required so that Algonquin can construct and have the facilities proposed herein in service by November 1, 2016, in order to meet the transportation needs of the Project Shippers for the 2016-17 winter heating season.

Respectfully submitted,

ALGONQUIN GAS TRANSMISSION, LLC

By 

Berk Donaldson  
Director, Rates and Certificates

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

Verification

VERIFICATION

THE STATE OF TEXAS                     )  
  )  
COUNTY OF HARRIS                    )

Berk Donaldson, being first duly sworn, states that he is Director, Rates and Certificates, for Algonquin Gas Transmission, LLC; that he is authorized to execute this Verification; that he has read the foregoing document and is familiar with the contents thereof; and that all allegations of fact therein contained are true and correct to the best of his knowledge and belief.

ALGONQUIN GAS TRANSMISSION, LLC



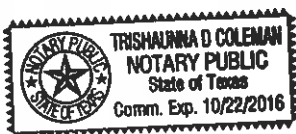
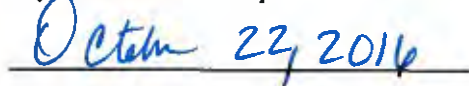
Berk Donaldson  
Director, Rates and Certificates

Subscribed and sworn to before me this 28<sup>th</sup> day of February, 2014.



Notary Public, State of Texas

My Commission Expires:



# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit B**

State Authorization



FOREIGN  
LIMITED LIABILITY COMPANY

STATE OF MAINE

APPLICATION FOR AUTHORITY  
TO DO BUSINESS

(Check box only if applicable)

☐

This is a professional limited liability company\*qualified pursuant to 13 MRSA Chapter 22-A to provide the following professional services:

(type of professional services)

Filing Fee \$250.00

File No. 20070425FC Pages 4  
Fee Paid \$ 250  
DCN 2070541800004 QUAL  
FILED  
02/22/2007

*Julia H. Flynn*  
Deputy Secretary of State

A True Copy When Attested By Signature

*Julia H. Flynn*  
Deputy Secretary of State

Pursuant to 31 MRSA §712.3, the undersigned limited liability company executes and delivers the following Application for Authority to do Business:

FIRST: The name of Limited Liability Company\*\* in Jurisdiction of Organization is  
Algonquin Gas Transmission, LLC

SECOND: If the real limited liability company name is not available, the fictitious name under which it proposes to apply for authority to do business in the State of Maine is (If not applicable, so indicate.)

☐ Form MLLC-5 accompanies this application.

A fictitious name is a name adopted by a foreign limited liability company authorized to transact business in this State because its real name is unavailable pursuant to §603-A.

THIRD: (For professional limited liability companies only)

All of the professional limited liability companies' members and managers, if any, are licensed in one or more states to render a professional service disclosed in its application.

FOURTH: Date of organization 9/28/49 Jurisdiction of organization Delaware

Address of the registered or principal office, wherever located, is:

5400 Westheimer Court, Houston, Texas 77056

(physical location - street (not P.O. Box), city, state and zip code)

(mailing address if different from above)

FIFTH: The foreign limited liability company validly exists as a limited liability company under the laws of the jurisdiction of its organization. The nature of the business or purposes to be conducted or promoted in the State of Maine is

Transmission of natural gas

FORM NO. MLLC-12 (1 of 3)

ME092 - 12/02/2003 CT System Online

J.A. - 0094

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit C**

Company Officials

**Algonquin Gas Transmission, LLC**

**Company Officers**

**Board of Managers:**

J. Patrick Reddy  
Gregory J. Rizzo  
William T. Yardley

**Officers:**

William T. Yardley, President  
John V. Adams, Vice President, Transmission Services  
Gregory P. Bilinski, Vice President, Transmission Technical Services  
Frederick S. (Steve) Bush, Vice President and Controller  
Allen C. Capps, Vice President  
J. Andrew Drake, Vice President, Operations and Environment, Health and Safety  
Tina V. Faraca, Vice President, Engineering and Construction  
Paul K. Haralson, Assistant Treasurer  
Patrick J. Hester, Vice President and Assistant Secretary  
Edward J. Koval, Vice President, Supply Chain  
Richard J. Kruse, Jr., Vice President, Regulatory and FERC Compliance Officer  
Fulkra J. Mason, Vice President, Environmental, Health and Safety  
Gregg E. McBride, Vice President, Rates & Certificates  
Allison McHenry, Assistant Secretary  
Brian R. McKerlie, Vice President, Business Development U.S.  
Richard M. Paglia, Vice President, Marketing  
Patricia M. Rice, Vice President and Secretary  
Gregory J. Rizzo, Group Vice President, Regulatory Affairs  
Laura J. Buss Sayavedra, Vice President and Treasurer  
Thomas L. Stanton, Assistant Secretary  
W. L. Whaley, Jr., Vice President, Gas Control  
Thomas V. Wooden, Vice President, Field Operations

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

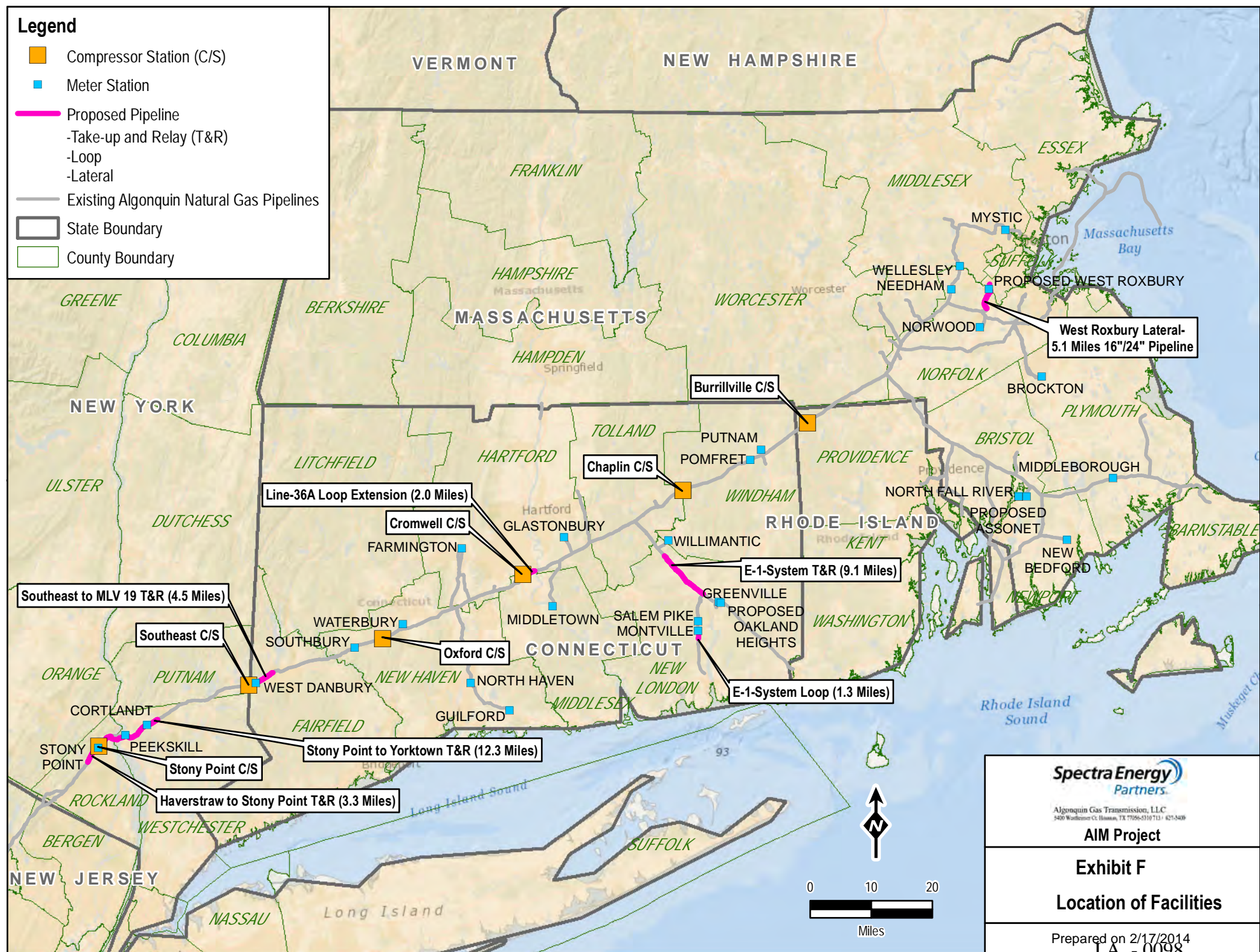
**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit F**

Location of Facilities

## Legend

- Compressor Station (C/S)
- Meter Station
- Proposed Pipeline
  - Take-up and Relay (T&R)
  - Loop
  - Lateral
- Existing Algonquin Natural Gas Pipelines
- State Boundary
- County Boundary



**Spectra Energy**  
Partners

Algonquin Gas Transmission, LLC  
3400 Westchester Ct., Houston, TX 77066-0110 | 625-3409

**AIM Project**

**Exhibit F**

**Location of Facilities**

Prepared on 2/17/2014

J.A. - 0098



# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit F-I**

Environmental Report

Enclosed under separate cover

in Volumes II - IV

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_-000**

### **Exhibits G through G-II**

**Flow Diagram Data**

Enclosed under separate cover  
in Volume IV,  
with confidential and privileged information  
removed to the disk  
containing Volume III.

This information has been marked  
**Contains Critical Energy Infrastructure Information—Do Not Release**

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit I**

Market Data

Enclosed herewith under seal in Volume III and marked

~~“Contains Privileged Information—Do Not Release”~~

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit J**

Other Federal Authorizations

## Exhibit J

### Federal and State Permits/Approvals and Consultations AIM Project

Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
<b>FEDERAL</b>			
<b>Federal Energy Regulatory Commission (FERC)</b> <ul style="list-style-type: none"> <li>Office of Energy Projects (OEP)</li> </ul>	<b>Required Permit:</b> <ul style="list-style-type: none"> <li>Certificate of Public Convenience and Necessity</li> <li>National Environmental Policy Act (NEPA) – Environmental Impact Statement Review</li> <li>Pipeline abandonment under Section 7(b) of the Natural Gas Act</li> </ul>	Initiate Pre-Filing - June, 2013  Filed draft Resource Reports November 2013  Filed Formal FERC Application – February 28, 2014	Receive FERC Certificate – January 2015
<b>U.S. Army Corps of Engineers (USACE)</b> <ul style="list-style-type: none"> <li>New England District – Regulatory Division</li> <li>New York District – Regulatory Division</li> </ul>	<b>Required Permit:</b> <ul style="list-style-type: none"> <li>Section 10 Rivers and Harbors Act</li> <li>Section 404 Clean Water Act (CWA)</li> </ul>	March 2014	1st Quarter 2015
<b>U.S. Environmental Protection Agency (USEPA)</b> <ul style="list-style-type: none"> <li>Region 1 (New England)</li> <li>Region 2 (New York)</li> </ul>	<b>Consultations:</b> <ul style="list-style-type: none"> <li>Wetland review during USACE Section 404 permit process</li> <li>Consultation during NEPA review and oversight of air permits</li> <li>Spill Prevention, Control and Countermeasures (SPCC) Plan</li> <li>SIP Conformity</li> </ul>	No USEPA approval required. Consultation through the USACE permitting process.	N/A
<b>National Marine Fisheries Service (NOAA Fisheries)</b> <ul style="list-style-type: none"> <li>Office of Protected Resources</li> </ul>	<b>Consultations:</b> <ul style="list-style-type: none"> <li>Federal Endangered Species Act</li> <li>Magnuson-Stevens Fishery Conservation and Management Act</li> </ul>	Ongoing Consultation	N/A
<b>U.S. Fish and Wildlife Service (USFWS)</b> <ul style="list-style-type: none"> <li>New England Field Office</li> <li>New York Field Office</li> </ul>	<b>Consultations:</b> <ul style="list-style-type: none"> <li>Federal Endangered Species Act</li> <li>Migratory Bird Treaty Act</li> <li>Fish and Wildlife Coordination Act</li> </ul>	Ongoing Consultation	N/A
<b>STATE OF NEW YORK</b>			
<b>New York State Department of Environmental Conservation (NYSDEC)</b> <ul style="list-style-type: none"> <li>Division of Environmental Permits</li> <li>Bureau of Water Permits</li> <li>Bureau of Habitat (Freshwater Wetlands Program)</li> </ul>	<b>Required Permits:</b> <ul style="list-style-type: none"> <li>Section 401 Water Quality Certification (WQC) pursuant to Section 401 of the CWA</li> <li>Freshwater Wetland Permit</li> <li>State Pollution Discharge Elimination System (SPDES) Hydrostatic Test Water</li> <li>Protection of Waters Permit</li> <li>Construction Stormwater General Permit -</li> </ul>	March 2014	1 <sup>st</sup> Quarter 2015



Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
	Stormwater Pollution Prevention Plan (SWPPP)		
<b>New York State Department of Environmental Conservation (NYSDEC)</b> <ul style="list-style-type: none"> <li>Division of Fish, Wildlife &amp; Marine Resources <ul style="list-style-type: none"> <li>Bureau of Wildlife and Fisheries</li> <li>New York Natural Heritage Program</li> </ul> </li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>State-listed threatened and endangered species consultations</li> </ul>	Ongoing Consultation	N/A
<b>New York State Department of Environmental Conservation (NYSDEC)</b> <ul style="list-style-type: none"> <li>Division of Air Resources</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Air Permits for Compressor Station Modifications</li> </ul>	1 <sup>st</sup> Quarter 2014	1 <sup>st</sup> Quarter 2015
<b>New York State Department of State</b> <ul style="list-style-type: none"> <li>Office of Communities &amp; Waterfronts</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>Coastal Zone Consistency Review</li> </ul>	February 2014	4 <sup>th</sup> Quarter 2014
<b>New York State Office of General Services</b> <ul style="list-style-type: none"> <li>Real Estate Development - Land Management</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>Application for Use of Land Underwater</li> </ul>	July 2014	1 <sup>st</sup> Quarter 2015
<b>New York State Office of Parks, Recreation &amp; Historic Preservation</b> <ul style="list-style-type: none"> <li>Historic Preservation Office – Environmental Review Program</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation regarding Section 106, National Historic Preservation Act</li> <li>Review and consultation regarding potential encroachment across state lands</li> </ul>	Ongoing Consultation	N/A
<b>New York City Department of Environmental Protection</b>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Stormwater Pollution Prevention Plan and erosion and sediment control</li> <li>Land Use Permit for Catskill Aqueduct crossing</li> </ul>	2 <sup>nd</sup> Quarter 2014	4 <sup>th</sup> Quarter 2014
<b>County of Westchester and County of Rockland, New York</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Consultation regarding encroachment across county lands</li> </ul>	Ongoing Consultation	N/A
<b>Municipal Agencies, New York</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Municipal wetland permits</li> <li>Other municipal requirements related to pipeline construction, including steep slope, erosion control, tree clearing, stream conservation and stormwater programs, air quality, impacts to agricultural districts</li> </ul>	Ongoing Consultation	N/A
<b>STATE OF CONNECTICUT</b>			
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Bureau of Water Protection and Land Reuse</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>401 Water Quality Certification</li> <li>Inland Wetlands and Watercourses</li> <li>Water Diversion Permit (Non-consumptive Use)</li> <li>General Permit for discharges of hydrostatic test water</li> <li>Stormwater and Dewatering</li> </ul>	March 2014	1 <sup>st</sup> Quarter 2015

Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
	Wastewaters from Construction		
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Bureau of Natural Resources <ul style="list-style-type: none"> <li>Wildlife Division - Natural Diversity Data Base</li> <li>Inland Fisheries</li> </ul> </li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>State-listed threatened and endangered species consultations</li> <li>Inland fisheries</li> </ul>	Ongoing Consultation	N/A
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Bureau of Air Management</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Air Permits for modifications to compressor stations</li> </ul>	1 <sup>st</sup> Quarter 2014	3 <sup>rd</sup> Quarter 2015
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Connecticut Siting Council</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and certification of energy facilities through the FERC process</li> </ul>	Ongoing consultation	N/A
<b>Connecticut Department of Economic and Community Development</b> <b>Offices of Culture and Tourism</b> <b>Connecticut State Historic Preservation Office</b> <ul style="list-style-type: none"> <li>Connecticut Office of the State Archaeologist</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>	Ongoing consultation	4 <sup>th</sup> Quarter 2014
<b>Connecticut Indian Affairs Council</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>	Ongoing consultation	4 <sup>th</sup> Quarter 2014
<b>Connecticut Commission on Culture and Tourism</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>	Ongoing consultation	4 <sup>th</sup> Quarter 2014
<b>Municipal Inland Wetlands and Watercourse Agencies</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses</li> </ul>	Ongoing Consultation	N/A
<b>STATE OF RHODE ISLAND</b>			
<b>Rhode Island Department of Environmental Management</b> <ul style="list-style-type: none"> <li>Bureau of Environmental Protection</li> <li>Office of Water Resources</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Notice of Intent - Storm Water General Permit for Construction Activity</li> <li>RIPDES Waste Water Discharge Permit for Hydrostatic Test Water</li> </ul>	2 <sup>nd</sup> Quarter 2014	2 <sup>nd</sup> Quarter 2015
<b>Rhode Island Department of Environmental Management</b> <ul style="list-style-type: none"> <li>Bureau of Environmental Protection</li> <li>Office of Air Resources</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Air Permit for Modifications to Burrillville Compressor Station</li> </ul>	1 <sup>st</sup> Quarter 2014	3 <sup>rd</sup> Quarter 2015
<b>Rhode Island Division of Planning and Development</b> <ul style="list-style-type: none"> <li>Natural Heritage Program</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Rhode Island Endangered Species or Animals and Plants</li> </ul>	Consultation complete	N/A
<b>Rhode Island Historical Preservation &amp; Heritage Commission</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review under Section 106 of the National Historic Preservation Act</li> </ul>	Ongoing consultation	4 <sup>th</sup> Quarter 2014
<b>COMMONWEALTH OF MASSACHUSETTS</b>			
<b>Massachusetts Executive Office of Energy and Environmental Affairs</b> <ul style="list-style-type: none"> <li>MEPA Office</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>MEPA Certificate</li> </ul>	Filed February 18, 2014	April 2014

Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
<ul style="list-style-type: none"> <li>Massachusetts Office of Coastal Zone Management (CZM)</li> </ul>	<i>Consistency Determination</i> <ul style="list-style-type: none"> <li>CZM Consistency (applies only to the Assonet M&amp;R Station and North Fall River M&amp;R Station improvements, which are at the same location)</li> </ul>	January 2014	Received consistency determination February 6, 2014. Correspondence is provided in Attachment 1E.
<b>Massachusetts Department of Environmental Protection</b> <ul style="list-style-type: none"> <li>Northeast Regional Office</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>401 Water Quality Certification</li> </ul>	April 2014	1 <sup>st</sup> Quarter 2015
<b>Massachusetts Department of Transportation</b>	<i>MassDOT</i>	2 <sup>nd</sup> Quarter 2014	1 <sup>st</sup> Quarter 2015
<b>Massachusetts Energy Facilities Siting Board</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and comment on FERC-regulated energy projects</li> </ul>	N/A	N/A
<b>Massachusetts Division of Wildlife and Fisheries</b> <ul style="list-style-type: none"> <li>Natural Heritage &amp; Endangered Species Program</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Massachusetts Endangered Species Act (MESA)</li> </ul>	<i>Consultation complete</i>	N/A
<b>Massachusetts Historical Commission</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Commission on Indian Affairs</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Wetlands Protection Act</b> <ul style="list-style-type: none"> <li>Permits from Local Municipal Conservation Commissions</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>Order of Conditions – Massachusetts Wetlands Protection Act</li> <li>Local Wetland Bylaws/Ordinances</li> </ul>	3 <sup>rd</sup> Quarter 2014	1 <sup>st</sup> Quarter 2015
<b>Municipal Historical Commissions</b>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Board of Underwater Archaeological Resources</b>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Department of Conservation and Recreation</b>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>NATIVE AMERICAN GROUPS</b>			
<b>Federally Recognized</b> <ul style="list-style-type: none"> <li>Wampanoag Tribe of Gay Head (Aquinnah)</li> <li>Mashpee Wampanoag Indian Tribe</li> <li>Narragansett Indian Tribe</li> <li>Mohegan Indian Tribe</li> <li>Mashantucket Pequot Tribal Nation</li> <li>Delaware Nation of Oklahoma</li> <li>Delaware Tribe of Indians</li> <li>St. Regis Mohawk Tribe</li> <li>Stockbridge-Munsee Community Band of Mohican Indians</li> </ul>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014

Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
<b>Non-Federally Recognized</b> <ul style="list-style-type: none"> <li>○ Ramapough Lenape Indian Nation</li> <li>○ Golden Hill Tribe of the Paugussett Indian Nation</li> <li>○ Schaghticoke Tribal Nation</li> <li>○ Eastern Pequot Tribal Nation</li> </ul>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>○ Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	<i>4<sup>th</sup> Quarter 2014</i>

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit K**

Cost of Facilities



## SUMMARY COST OF FACILITIES

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: **2015/ 2016**  
FACILITY: AIM & West Roxbury Project Summary

DESCRIPTION	<u>EXHIBIT K AIM</u>	<u>EXHIBIT K WEST ROXBURY</u>
Compression	\$286,284,922	0
Pipeline	\$442,573,831	0
Lateral	\$72,808,968	0
M&R	\$74,590,858	0
WEST ROXBURY	<u>\$0</u>	<u>\$95,293,105</u>
PROJECT TOTAL	\$876,258,578	\$95,293,105

## SUMMARY COST OF FACILITIES

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR:  
FACILITY: Summary of Costs AIM

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 28,779,575.00
133	RIGHT OF WAY DAMAGES	\$ 17,579,622.00
134	SURVEYS	\$ 12,329,293.00
135	MATERIALS	\$ 170,683,199.00
136	LABOR (Prime Contractor)	\$ 332,174,879.00
137	ENGINEERING & INSPECTION	\$ 85,391,577.00
144	OVERHEAD	\$ 52,560,386.00
145	AFUDC	\$ 43,457,069.29
146	CONTINGENCY	\$ 76,458,404.00
147	LEGAL FEES	\$ 9,429,967.00
148	OTHER SERVICES	\$ 2,973,362.00
	SUBTOTAL	<u>\$831,817,333.29</u>
	Escalation	\$ 44,441,245.00
	PROJECT TOTAL	\$876,258,578

## SUMMARY COST OF FACILITIES

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR:  
FACILITY: Compressor Station Summary

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 552,586.00
133	RIGHT OF WAY DAMAGES	\$ -
134	SURVEYS	\$ 2,289,500.00
135	MATERIALS	\$ 97,696,061.00
136	LABOR (Prime Contractor)	\$ 76,281,964.00
137	ENGINEERING & INSPECTION	\$ 36,341,710.00
144	OVERHEAD	\$ 16,824,368.00
145	AFUDC	\$ 14,078,413.65
146	CONTINGENCY	\$ 27,160,689.00
147	LEGAL FEES	\$ 558,627.00
148	OTHER SERVICES	\$ 322,155.00
	SUBTOTAL	<u>\$272,106,073.65</u>
	Escalation	\$ 14,178,848.00
	PROJECT TOTAL	\$286,284,922

NAME:	ALGONQUIN GAS TRANSMISSION, LLC
DOCKET NO.:	
PROJECT:	AIM
PROJECT YEAR:	<b>2015</b>
FACILITY:	Burrilville Compressor Station Mars 100

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 78,400.00
133	RIGHT OF WAY DAMAGES	\$ -
134	SURVEYS	\$ 358,000.00
135	MATERIALS	\$ 18,476,660.00
136	LABOR (Prime Contractor)	\$ 15,172,884.00
137	ENGINEERING & INSPECTION	\$ 8,205,267.00
144	OVERHEAD	\$ 3,079,331.00
145	AFUDC	\$ 2,512,693.62
146	CONTINGENCY	\$ 4,627,266.00
147	LEGAL FEES	\$ 107,500.00
148	OTHER SERVICES	\$ 81,664.00
	SUBTOTAL	<u>\$52,699,665.62</u>
	Escalation	\$ 2,848,292.00
	PROJECT TOTAL	\$55,547,958

NAME:	ALGONQUIN GAS TRANSMISSION, LLC
DOCKET NO.:	
PROJECT:	AIM
PROJECT YEAR:	<b>2015</b>
FACILITY:	Cromwell Compressor Station Mars 100

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 70,320.00
133	RIGHT OF WAY DAMAGES	\$ -
134	SURVEYS	\$ 345,000.00
135	MATERIALS	\$ 17,394,495.00
136	LABOR (Prime Contractor)	\$ 11,495,635.00
137	ENGINEERING & INSPECTION	\$ 8,088,114.00
144	OVERHEAD	\$ 3,345,923.00
145	AFUDC	\$ 2,444,392.73
146	CONTINGENCY	\$ 4,471,101.00
147	LEGAL FEES	\$ 107,500.00
148	OTHER SERVICES	\$ 101,664.00
	SUBTOTAL	<u>\$47,864,144.73</u>
	Escalation	\$ 2,137,357.00
	PROJECT TOTAL	\$50,001,502

NAME:	ALGONQUIN GAS TRANSMISSION, LLC
DOCKET NO.:	
PROJECT:	AIM
PROJECT YEAR:	<b>2015</b>
FACILITY:	Chaplin Compressor Station Taurus 60

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 99,200.00
133	RIGHT OF WAY DAMAGES	\$ -
134	SURVEYS	\$ 152,000.00
135	MATERIALS	\$ 14,920,365.00
136	LABOR (Prime Contractor)	\$ 14,744,031.00
137	ENGINEERING & INSPECTION	\$ 8,177,741.00
144	OVERHEAD	\$ 2,659,688.00
145	AFUDC	\$ 2,093,892.84
146	CONTINGENCY	\$ 4,166,964.00
147	LEGAL FEES	\$ 107,500.00
148	OTHER SERVICES	\$ 31,664.00
	SUBTOTAL	<u>\$47,153,045.84</u>
	Escalation	\$ 2,564,955.00
	PROJECT TOTAL	\$49,718,001



NAME: ALGONQUIN GAS TRANSMISSION, LLC  
 DOCKET NO.:  
 PROJECT: AIM  
 PROJECT YEAR: 2016  
 FACILITY: Stony Point Compressor Station 2 Mars 100

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 78,400.00
133	RIGHT OF WAY DAMAGES	\$ -
134	SURVEYS	\$ 964,500.00
135	MATERIALS <sup>1</sup>	\$ 28,618,322.00
136	LABOR (Prime Contractor)	\$ 22,913,927.00
137	ENGINEERING & INSPECTION	\$ 6,699,806.00
144	OVERHEAD	\$ 4,598,078.00
145	AFUDC	\$ 4,150,486.40
146	CONTINGENCY	\$ 9,581,717.00
147	LEGAL FEES	\$ 107,500.00
148	OTHER SERVICES	\$ 65,499.00
	SUBTOTAL	<u>\$77,778,235.40</u>
	Escalation	\$ 4,172,344.00
	PROJECT TOTAL	\$81,950,579

<sup>1</sup>Compressor unit designed with sufficient horsepower to address needs of AIM Project and separate system maintenance project, thereby eliminating duplicative facilities and greater aggregate costs. A credit adjustment was made in the amount of \$2.8 million to Materials so that compressor unit costs allocated to the AIM Project include only costs that would have been incurred absent the need for the incremental compression for the system project and larger horsepower unit.

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
 DOCKET NO.:  
 PROJECT: AIM  
 PROJECT YEAR: **2016**  
 FACILITY: Southeast Compressor Station Taurus 70

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 226,266.00
133	RIGHT OF WAY DAMAGES	\$ -
134	SURVEYS	\$ 470,000.00
135	MATERIALS	\$ 18,286,219.00
136	LABOR (Prime Contractor)	\$ 11,955,487.00
137	ENGINEERING & INSPECTION	\$ 5,170,782.00
144	OVERHEAD	\$ 3,141,348.00
145	AFUDC	\$ 2,876,948.06
146	CONTINGENCY	\$ 4,313,641.00
147	LEGAL FEES	\$ 128,627.00
148	OTHER SERVICES	\$ 41,664.00
	SUBTOTAL	<u>\$46,610,982.06</u>
	Escalation	\$ 2,455,900.00
	PROJECT TOTAL	\$49,066,882

## SUMMARY COST OF PIPELINES

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: 2016  
FACILITY: Pipeline Summary

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 21,990,335.00
133	RIGHT OF WAY DAMAGES	\$ 16,065,891.00
134	SURVEYS	\$ 7,681,976.00
135	MATERIALS	\$ 54,041,157.00
136	LABOR (Prime Contractor)	\$ 193,114,103.00
137	ENGINEERING & INSPECTION	\$ 31,186,673.00
144	OVERHEAD	\$ 25,992,915.00
145	AFUDC	\$ 23,516,753.83
146	CONTINGENCY	\$ 36,998,571.00
147	LEGAL FEES	\$ 7,194,558.00
148	OTHER SERVICES	\$ 2,099,947.00
	SUBTOTAL	<u>\$419,882,879.83</u>
	Escalation	\$ 22,690,951.00
	PROJECT TOTAL	\$442,573,831

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: 2016  
FACILITY: Haverstraw to Stony Pt - Take-up & Relay of 3.3 Miles of 26" with 42"

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 3,720,400.00
133	RIGHT OF WAY DAMAGES	\$ 2,683,750.00
134	SURVEYS	\$ 646,124.00
135	MATERIALS	\$ 7,414,798.00
136	LABOR (Prime Contractor)	\$ 23,790,586.00
137	ENGINEERING & INSPECTION	\$ 6,611,620.00
144	OVERHEAD	\$ 3,747,726.00
145	AFUDC	\$ 3,251,043.22
146	CONTINGENCY	\$ 5,171,088.00
147	LEGAL FEES	\$ 1,053,473.00
148	OTHER SERVICES	\$ 382,177.00
	SUBTOTAL	<u>\$58,472,785.22</u>
	Escalation	\$ 3,183,040.00
	PROJECT TOTAL	\$61,655,825

NAME:	ALGONQUIN GAS TRANSMISSION, LLC
DOCKET NO.:	
PROJECT:	AIM
PROJECT YEAR:	<b>2016</b>
FACILITY:	Stony Point to Yorktown - Take-up & Relay of 12.3 Miles of 26" with 42"

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 11,924,592.00
133	RIGHT OF WAY DAMAGES	\$ 9,088,067.00
134	SURVEYS	\$ 5,696,478.00
135	MATERIALS	\$ 31,681,502.00
136	LABOR (Prime Contractor)	\$ 104,345,477.00
137	ENGINEERING & INSPECTION	\$ 14,498,310.00
144	OVERHEAD	\$ 15,198,440.00
145	AFUDC	\$ 14,716,164.61
146	CONTINGENCY	\$ 20,333,184.00
147	LEGAL FEES	\$ 4,286,341.00
148	OTHER SERVICES	\$ 1,215,661.00
	SUBTOTAL	<u>\$232,984,216.61</u>
	Escalation	\$ 12,432,647.00
	PROJECT TOTAL	\$245,416,864

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: 2016  
FACILITY: Southeast to Main Line Valve 19 - Take-up & Relay of 4.5 Miles of 26" with 42"

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 4,072,288.00
133	RIGHT OF WAY DAMAGES	\$ 3,720,437.00
134	SURVEYS	\$ 918,177.00
135	MATERIALS	\$ 12,342,663.00
136	LABOR (Prime Contractor)	\$ 55,016,431.00
137	ENGINEERING & INSPECTION	\$ 7,812,374.00
144	OVERHEAD	\$ 5,440,005.00
145	AFUDC	\$ 4,466,381.90
146	CONTINGENCY	\$ 9,433,359.00
147	LEGAL FEES	\$ 1,267,098.00
148	OTHER SERVICES	\$ 312,272.00
	SUBTOTAL	<u>\$104,801,485.90</u>
	Escalation	\$ 5,806,661.00
	PROJECT TOTAL	\$110,608,147



NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: 2015  
FACILITY: Cromwell to Connecticut Loop - 2.0 Miles of 26" loop

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 2,273,055.00
133	RIGHT OF WAY DAMAGES	\$ 573,637.00
134	SURVEYS	\$ 421,197.00
135	MATERIALS	\$ 2,602,194.00
136	LABOR (Prime Contractor)	\$ 9,961,609.00
137	ENGINEERING & INSPECTION	\$ 2,264,369.00
144	OVERHEAD	\$ 1,606,744.00
145	AFUDC	\$ 1,083,164.10
146	CONTINGENCY	\$ 2,060,940.00
147	LEGAL FEES	\$ 587,646.00
148	OTHER SERVICES	\$ 189,837.00
	SUBTOTAL	<u>\$23,624,392.10</u>
	Escalation	\$ 1,268,603.00
	PROJECT TOTAL	\$24,892,995

## SUMMARY COST OF LATERALS

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR:  
FACILITY: E-1 Lateral Facilities

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 4,158,679.00
133	RIGHT OF WAY DAMAGES	\$ 1,456,895.00
134	SURVEYS	\$ 2,118,599.00
135	MATERIALS	\$ 5,238,790.00
136	LABOR (Prime Contractor)	\$ 33,771,711.00
137	ENGINEERING & INSPECTION	\$ 6,737,784.00
144	OVERHEAD	\$ 4,735,452.00
145	AFUDC	\$ 2,848,684.77
146	CONTINGENCY	\$ 6,106,894.00
147	LEGAL FEES	\$ 1,343,400.00
148	OTHER SERVICES	\$ 533,008.00
	SUBTOTAL	<u>\$69,049,896.77</u>
	Escalation	\$ 3,759,071.00
	PROJECT TOTAL	\$72,808,968

## SUMMARY COST OF LATERALS

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR:  
FACILITY: E-1 System - Take-up & Relay of 9.1 Miles of 6" with 16"

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 3,378,418.00
133	RIGHT OF WAY DAMAGES	\$ 1,232,804.00
134	SURVEYS	\$ 1,750,744.00
135	MATERIALS	\$ 4,301,395.00
136	LABOR (Prime Contractor)	\$ 27,560,707.00
137	ENGINEERING & INSPECTION	\$ 5,474,027.00
144	OVERHEAD	\$ 3,735,575.00
145	AFUDC	\$ 2,285,210.68
146	CONTINGENCY	\$ 4,960,583.00
147	LEGAL FEES	\$ 967,488.00
148	OTHER SERVICES	\$ 412,765.00
	SUBTOTAL	<u>\$56,059,716.68</u>
	Escalation	\$ 3,053,464.00
	PROJECT TOTAL	\$59,113,181

## SUMMARY COST OF LATERALS

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR:  
FACILITY: E-1 System – 1.3 Miles of 12" Loop

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 780,261.00
133	RIGHT OF WAY DAMAGES	\$ 224,091.00
134	SURVEYS	\$ 367,855.00
135	MATERIALS	\$ 937,395.00
136	LABOR (Prime Contractor)	\$ 6,211,004.00
137	ENGINEERING & INSPECTION	\$ 1,263,757.00
144	OVERHEAD	\$ 999,877.00
145	AFUDC	\$ 563,474.09
146	CONTINGENCY	\$ 1,146,311.00
147	LEGAL FEES	\$ 375,912.00
148	OTHER SERVICES	\$ 120,243.00
	SUBTOTAL	<u>\$12,990,180.09</u>
	Escalation	\$ 705,607.00
	PROJECT TOTAL	\$13,695,787

## SUMMARY COST OF M&R

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: **2016**  
FACILITY: M&R Summary

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 2,077,975.00
133	RIGHT OF WAY DAMAGES	\$ 56,836.00
134	SURVEYS	\$ 239,218.00
135	MATERIALS	\$ 13,707,191.00
136	LABOR (Prime Contractor)	\$ 29,007,101.00
137	ENGINEERING & INSPECTION	\$ 11,125,410.00
144	OVERHEAD	\$ 5,007,651.00
145	AFUDC	\$ 3,013,217.04
146	CONTINGENCY	\$ 6,192,250.00
147	LEGAL FEES	\$ 333,382.00
148	OTHER SERVICES	\$ 18,252.00
	SUBTOTAL	<u>\$70,778,483.04</u>
	Escalation	\$ 3,812,375.00
	PROJECT TOTAL	\$74,590,858

NAME:	ALGONQUIN GAS TRANSMISSION, LLC
DOCKET NO.:	
PROJECT:	AIM
PROJECT YEAR:	<b>2016</b>
FACILITY:	New York - M&R Modifications

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 105,190.00
133	RIGHT OF WAY DAMAGES	\$ 5,052.00
134	SURVEYS	\$ 18,420.00
135	MATERIALS	\$ 1,129,314.00
136	LABOR (Prime Contractor)	\$ 4,746,752.00
137	ENGINEERING & INSPECTION	\$ 1,110,805.00
144	OVERHEAD	\$ 502,053.00
145	AFUDC	\$ 295,846.77
146	CONTINGENCY	\$ 783,113.00
147	LEGAL FEES	\$ 40,834.00
148	OTHER SERVICES	\$ 1,404.00
	SUBTOTAL	<u>\$8,738,783.77</u>
	Escalation	\$ 482,042.00
	PROJECT TOTAL	\$9,220,826



NAME:	ALGONQUIN GAS TRANSMISSION, LLC
DOCKET NO.:	
PROJECT:	AIM
PROJECT YEAR:	<b>2016</b>
FACILITY:	Connecticut - New M&R (Oakland Heights) and M&R Modifications

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 1,124,410.00
133	RIGHT OF WAY DAMAGES	\$ 31,576.00
134	SURVEYS	\$ 136,760.00
135	MATERIALS	\$ 8,092,112.00
136	LABOR (Prime Contractor)	\$ 15,663,932.00
137	ENGINEERING & INSPECTION	\$ 6,204,410.00
144	OVERHEAD	\$ 2,813,268.00
145	AFUDC	\$ 1,704,154.92
146	CONTINGENCY	\$ 3,447,040.00
147	LEGAL FEES	\$ 188,212.00
148	OTHER SERVICES	\$ 10,530.00
	SUBTOTAL	<u>\$39,416,404.92</u>
	Escalation	\$ 2,122,572.00
	PROJECT TOTAL	\$41,538,977

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: 2016  
FACILITY: Massachusetts - New M&R (Assonet) and M&R Modifications

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 848,375.00
133	RIGHT OF WAY DAMAGES	\$ 20,208.00
134	SURVEYS	\$ 84,038.00
135	MATERIALS	\$ 4,485,765.00
136	LABOR (Prime Contractor)	\$ 8,596,417.00
137	ENGINEERING & INSPECTION	\$ 3,810,195.00
144	OVERHEAD	\$ 1,692,330.00
145	AFUDC	\$ 1,013,215.35
146	CONTINGENCY	\$ 1,962,097.00
147	LEGAL FEES	\$ 104,336.00
148	OTHER SERVICES	\$ 6,318.00
	SUBTOTAL	<u>\$22,623,294.35</u>
	Escalation	\$ 1,207,761.00
	PROJECT TOTAL	\$23,831,055

## SUMMARY COST OF WEST ROXBURY

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: **2016**  
FACILITY: West Roxbury Summary

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 14,404,129.00
133	RIGHT OF WAY DAMAGES	\$ 4,407,340.00
134	SURVEYS	\$ 744,408.00
135	MATERIALS	\$ 5,432,468.00
136	LABOR (Prime Contractor)	\$ 35,916,458.00
137	ENGINEERING & INSPECTION	\$ 7,140,852.00
144	OVERHEAD	\$ 6,304,644.00
145	AFUDC	\$ 6,104,815.10
146	CONTINGENCY	\$ 7,799,235.00
147	LEGAL FEES	\$ 1,921,190.00
148	OTHER SERVICES	\$ 296,803.00
	SUBTOTAL	<u>\$90,472,342.10</u>
	Escalation	\$ 4,820,763.00
	PROJECT TOTAL	\$95,293,105

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
DOCKET NO.:  
PROJECT: AIM  
PROJECT YEAR: 2016  
FACILITY: West Roxbury Lateral - 4.2 Miles 16" and .9 Miles of 24"

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 13,739,020.00
133	RIGHT OF WAY DAMAGES	\$ 4,402,340.00
134	SURVEYS	\$ 729,387.00
135	MATERIALS	\$ 2,458,318.00
136	LABOR (Prime Contractor)	\$ 34,167,322.00
137	ENGINEERING & INSPECTION	\$ 6,360,667.00
144	OVERHEAD	\$ 5,831,332.00
145	AFUDC	\$ 5,571,662.19
146	CONTINGENCY	\$ 7,129,719.00
147	LEGAL FEES	\$ 1,904,190.00
148	OTHER SERVICES	\$ 296,101.00
	SUBTOTAL	<u>\$82,590,058.19</u>
	Escalation	\$ 4,408,645.00
	PROJECT TOTAL	\$86,998,703

NAME: ALGONQUIN GAS TRANSMISSION, LLC  
 DOCKET NO.:  
 PROJECT: AIM  
 PROJECT YEAR: 2016  
 FACILITY: West Roxbury Meter Station

ITEM	DESCRIPTION	<u>SUMMARY</u>
132	RIGHT OF WAY	\$ 665,109.00
133	RIGHT OF WAY DAMAGES	\$ 5,000.00
134	SURVEYS	\$ 15,021.00
135	MATERIALS	\$ 2,974,150.00
136	LABOR (Prime Contractor)	\$ 1,749,136.00
137	ENGINEERING & INSPECTION	\$ 780,185.00
144	OVERHEAD	\$ 473,312.00
145	AFUDC	\$ 533,152.91
146	CONTINGENCY	\$ 669,516.00
147	LEGAL FEES	\$ 17,000.00
148	OTHER SERVICES	\$ 702.00
	SUBTOTAL	<u>\$7,882,283.91</u>
	Escalation	\$ 412,118.00
	PROJECT TOTAL	\$8,294,402

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_-000**

### **Exhibit O**

Depreciation and Depletion



## Algonquin Incremental Market Project

### West Roxbury Lateral – Depreciation Rate

Algonquin proposes an annual depreciation rate of 6.67% for the West Roxbury Lateral. Given that this lateral is a market lateral with a long-term contract to serve a single customer, Algonquin proposes that the depreciation rate be based on the customer's 15-year contract term. This results in an annual depreciation rate of 6.67%.

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit P**

Tariff and Rates

**AIM Project**

**Cost of Service & Rates**

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## **AIM Expansion Project**

### **Explanatory Notes**

#### **Rate Derivation**

As shown on Schedule 2 herein, the rates proposed for firm service to project shippers of the AIM Project are 100% reservation rates, based on the incremental cost of service developed on Schedules 2 through 12 of this Exhibit P. Algonquin has utilized the expansion capacity of 342,000 Dth/d as the volume determinants for the AIM Project and 100,000 Dth/d as the volume determinants for the West Roxbury Lateral to develop the project rates.

No existing system costs have been assigned to these project rates and none of the incremental cost of service of the new AIM Project facilities is proposed to be included in Algonquin's system rates.

Algonquin has allocated \$500,000 of the West Roxbury Lateral cost of service to be recovered from interruptible customers. The company therefore proposes that no revenue crediting is required for the West Roxbury Lateral interruptible revenues. Further, Algonquin proposes to use the 100% load factor of the firm AFT-CL rate as the maximum rate for interruptible service on the West Roxbury Lateral.

#### **Cost of Service**

The rate of return and other factors used to develop the cost of service in this Exhibit P are the same factors underlying Algonquin's current rates, as approved in Docket No. RP99-262.<sup>1</sup> The factors include an allowed rate of return of 10.37% and a system depreciation rate of 1.81%. Additionally the current federal income tax rate of 35% has been used. As reflected in Exhibit O, Algonquin proposes to use a depreciation rate of 6.67% for the West Roxbury Lateral facilities.

The total capital cost estimate used herein to calculate Algonquin's AIM Project incremental cost of service is \$876,258,578 and for the West Roxbury Lateral cost of service is \$95,293,105, as detailed in Exhibit K.

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<sup>1</sup> *Algonquin Gas Transmission, LLC*, 87 FERC ¶ 61,008 (1999).

Algonquin proposes to recover fuel use and lost and unaccounted for fuel associated with providing service on the AIM Project facilities, through the incremental Fuel Reimbursement Percentage ("FRP"). The incremental fuel derivation is shown on Exhibit Z-2. Consistent with the Commission's incremental fuel methodology, Algonquin will track changes in fuel costs for this new incremental service on an incremental basis through its FRQ mechanism set forth in Section 32 of its GT&C. Algonquin will adjust its periodic tracker mechanisms to ensure that existing customers do not subsidize the costs resulting from this new incremental service.

#### Tariff Records

This Exhibit P includes updated *pro forma* tariff records for Rate Schedule AFT-1, Statement of Rates, to reflect the proposed incremental rate for the AIM Project, and Rate Schedules AFT-CL and AIT-2, Statement of Rates, to reflect the proposed recourse rates for the West Roxbury Lateral, as well as other tariff records to establish the terms and conditions for service on the AIM Project and the West Roxbury Lateral. The redlined tariff records highlight all changes to the currently effective tariff records. To the extent other changes to these tariff records become effective prior to placing the AIM Project into service, Algonquin will include those changes when filing to place these *pro forma* tariff records into effect.

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - Mainline**  
Cost of Service and Rate Design - AIM

Line <u>No.</u>	(1) <u>Description</u>	(2) <u>2016</u>	(3) <u>2017</u>	(4) <u>2018</u>
1	Operation and Maintenance Expense	\$3,216,412	\$3,280,740	\$3,346,355
2	Depreciation Expense	\$15,860,280	\$15,860,280	\$15,860,280
3	Taxes Other than Income	\$27,209,035	\$27,481,416	\$27,756,526
4	Federal Income Taxes	\$31,184,085	\$29,978,546	\$28,562,229
5	State Income Taxes	\$7,219,739	\$6,940,633	\$6,612,727
6	Return	<u>\$90,037,411</u>	<u>\$86,515,956</u>	<u>\$82,378,804</u>
7	Total Cost of Service	\$174,726,962	\$170,057,571	\$164,516,921
8	Rate Derivation:			
9	Capacity (Dth/d)	342,000		
10	Design Determinant	<u>4,104,000</u>		
11	Max. Reservation Charge	\$42.575		
12	Reservation Charge Adjustment	\$1.3997		
13	Usage-2 and Volumetric Res. Charge	\$1.3997		
14	Minimum Reservation Charge	\$0.1471		



**Algonquin Gas Transmission Company, LLC****AIM Project - Mainline****Operation and Maintenance Expenses - AIM**

Line	(1)	(2)	(3)	(4)
No.	Account Title	2016	2017	2018
1	Operation:			
2	850 Supervision & Engr. -Labor	\$88,933	\$90,712	\$92,526
3	850 Supervision & Engr. -M&O	\$177,867	\$181,424	\$185,052
4	851 Sys.Control & Load Dis. -Labor	\$0	\$0	\$0
5	851 Sys.Control & Load Dis. -M&O	\$0	\$0	\$0
6	852 Communication Systems -Labor	\$798	\$814	\$831
7	852 Communication Systems -M&O	\$1,597	\$1,629	\$1,661
8	853 Compressor Stations -Labor	\$193,414	\$197,282	\$201,228
9	853 Compressor Stations -M&O	\$386,828	\$394,565	\$402,456
10	855 Electric Power	\$0	\$0	\$0
11	856 Mains -Labor	\$32,530	\$33,181	\$33,844
12	856 Mains -M&O	\$65,060	\$66,361	\$67,688
13	857 M & R Station Expense -Labor	\$18,200	\$18,564	\$18,935
14	857 M & R Station Expense -M&O	\$36,400	\$37,128	\$37,871
15	858 Transportation by Others	\$0	\$0	\$0
16	860 Rents -M & O	\$0	\$0	\$0
17	Total Operation	\$1,001,627	\$1,021,660	\$1,042,093
18	Maintenance:			
19	861 Supervision & Engr. -Labor	\$0	\$0	\$0
20	861 Supervision & Engr. -M&O	\$0	\$0	\$0
21	862 Structures & Improvements -Labor	\$0	\$0	\$0
22	862 Structures & Improvements -M&O	\$0	\$0	\$0
23	863 Mains -Labor	\$0	\$0	\$0
24	863 Mains -M&O	\$0	\$0	\$0
25	864 Compressor Stations -Labor	\$108,419	\$110,588	\$112,799
26	864 Compressor Stations -M&O	\$216,839	\$221,175	\$225,599
27	865 M & R Stations -Labor	\$1,667	\$1,700	\$1,734
28	865 M & R Stations -M&O	\$3,333	\$3,400	\$3,468
29	866 Communication Systems -Labor	\$0	\$0	\$0
30	866 Communication Systems -M&O	\$0	\$0	\$0
31	867 Other Equipment -Labor	\$0	\$0	\$0
32	867 Other Equipment -M&O	\$0	\$0	\$0
33	Total Maintenance	\$330,258	\$336,863	\$343,600
34	Total Direct O&M	\$1,331,885	\$1,358,523	\$1,385,693
35	Administrative and General:			
36	Property Insurance @ 0.20%	\$1,752,517	\$1,787,567	\$1,823,319
37	Pensions & Benefits @ 29.73%	\$132,010	\$134,650	\$137,343
38	Total Administrative and General	\$1,884,527	\$1,922,218	\$1,960,662
39	Total Operation & Maintenance Expenses	\$3,216,412	\$3,280,740	\$3,346,355

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - Mainline**  
Depreciation Expense and Other Taxes - AIM

Line No.	(1) Description	(2) 2016	(3) 2017	(4) 2018
1	Depreciation Expense:			
2	Depreciable Plant	\$876,258,578	\$876,258,578	\$876,258,578
3	Depreciation Rate	<u>1.81%</u>	<u>1.81%</u>	<u>1.81%</u>
4	Depreciation Exp.	\$15,860,280	\$15,860,280	\$15,860,280
5	Taxes Other than Income:			
6	Ad Valorem Taxes:			
7	Gross Plant	\$876,258,578	\$876,258,578	\$876,258,578
8	Ad Valorem Taxes 3.102%	\$27,180,000	\$27,451,800	\$27,726,318
9	Payroll Taxes:			
10	Labor Cost	\$443,962	\$452,841	\$461,898
11	Payroll Taxes 6.540%	\$29,035	\$29,616	\$30,208
12	Total Taxes Other than Income	\$27,209,035	\$27,481,416	\$27,756,526

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - Mainline**  
Rate Base and Return - AIM

Line No.	(1) Description	(2) 2016	(3) 2017	(4) 2018
1	Rate Base:			
2	Gas Plant in Service	\$876,258,578	\$876,258,578	\$876,258,578
3	Accumulated Depreciation	<u>(\$7,930,140)</u>	<u>(\$23,790,420)</u>	<u>(\$39,650,700)</u>
4	Net Plant	\$868,328,438	\$852,468,158	\$836,607,878
5	Working Capital:			
	Materials & Supplies @ 0.600%	\$5,257,551	\$5,362,702	\$5,469,957
6	Accum. Deferred Income Taxes	<u>(\$5,337,085)</u>	<u>(\$23,540,058)</u>	<u>(\$47,682,420)</u>
7	Total Rate Base	\$868,248,905	\$834,290,803	\$794,395,415
8	Return @ 10.370%	\$90,037,411	\$86,515,956	\$82,378,804

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - Mainline**  
Federal and State Income Taxes - AIM

Line No.	(1) <u>Description</u>	(2) <u>2016</u>	(3) <u>2017</u>	(4) <u>2018</u>
1	Return	\$90,037,411	\$86,515,956	\$82,378,804
2	Adjustments:			
3	Interest and Debt Expense	(\$32,793,761)	(\$31,511,164)	(\$30,004,315)
4	Amortization of Equity AFUDC	<u>\$669,651</u>	<u>\$669,651</u>	<u>\$669,651</u>
5	Total Adjustments	(\$32,124,110)	(\$30,841,513)	(\$29,334,664)
6	Net Taxable Income	\$57,913,301	\$55,674,443	\$53,044,140
7	Federal Income Tax @ 35.00%	\$31,184,085	\$29,978,546	\$28,562,229
8	Pre-FIT (Lines 6 and 7)	\$89,097,386	\$85,652,989	\$81,606,369
9	State Income Tax @ 7.50%	\$7,219,739	\$6,940,633	\$6,612,727

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - West Roxbury Lateral**  
Cost of Service and Rate Design - West Roxbury Lateral

Line No.	(1) Description	(2) 2016	(3) 2017	(4) 2018
1	Operation and Maintenance Expense	\$222,845	\$227,302	\$231,848
2	Depreciation Expense	\$6,352,874	\$6,352,874	\$6,352,874
3	Taxes Other than Income	\$1,990,640	\$2,010,553	\$2,030,665
4	Federal Income Taxes	\$3,351,856	\$3,429,154	\$3,173,964
5	State Income Taxes	\$776,022	\$793,918	\$734,836
6	Return	<u>\$9,642,829</u>	<u>\$8,963,495</u>	<u>\$8,218,069</u>
7	Total Cost of Service	\$22,337,066	\$21,777,296	\$20,742,256
8	Less: Cost Allocated to Interruptible Service	<u>(\$500,000)</u>		
9	Cost of Service For Firm Service	\$21,837,066		
10	Rate Derivation:			
11	Capacity (Dth/d)	100,000		
12	Design Determinant	<u>1,200,000</u>		
13	Max. Reservation Charge	\$18.198		
14	Reservation Charge Adjustment	\$0.5983		
15	Usage-2 and Volumetric Res. Charge	\$0.5983		
16	Minimum Reservation Charge	\$0.0000		
17	Interruptible Usage Charge	\$0.5983		

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - West Roxbury Lateral**  
Operation and Maintenance Expenses - West Roxbury Lateral

Line	(1)	(2)	(3)	(4)
<u>No.</u>	<u>Account Title</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
1	Operation:			
2	850 Supervision & Engr. -Labor	\$0	\$0	\$0
3	850 Supervision & Engr. -M&O	\$0	\$0	\$0
4	851 Sys.Control & Load Dis. -Labor	\$0	\$0	\$0
5	851 Sys.Control & Load Dis. -M&O	\$0	\$0	\$0
6	852 Communication Systems -Labor	\$0	\$0	\$0
7	852 Communication Systems -M&O	\$0	\$0	\$0
8	853 Compressor Stations -Labor	\$0	\$0	\$0
9	853 Compressor Stations -M&O	\$0	\$0	\$0
10	855 Electric Power	\$0	\$0	\$0
11	856 Mains -Labor	\$1,667	\$1,700	\$1,734
12	856 Mains -M&O	\$3,333	\$3,400	\$3,468
13	857 M & R Station Expense -Labor	\$1,667	\$1,700	\$1,734
14	857 M & R Station Expense -M&O	\$3,333	\$3,400	\$3,468
15	858 Transportation by Others	\$0	\$0	\$0
16	860 Rents -M & O	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
17	Total Operation	\$10,000	\$10,200	\$10,404
18	Maintenance:			
19	861 Supervision & Engr. -Labor	\$0	\$0	\$0
20	861 Supervision & Engr. -M&O	\$0	\$0	\$0
21	862 Structures & Improvements -Labor	\$0	\$0	\$0
22	862 Structures & Improvements -M&O	\$0	\$0	\$0
23	863 Mains -Labor	\$6,450	\$6,579	\$6,711
24	863 Mains -M&O	\$12,900	\$13,158	\$13,421
25	864 Compressor Stations -Labor	\$0	\$0	\$0
26	864 Compressor Stations -M&O	\$0	\$0	\$0
27	865 M & R Stations -Labor	\$0	\$0	\$0
28	865 M & R Stations -M&O	\$0	\$0	\$0
29	866 Communication Systems -Labor	\$0	\$0	\$0
30	866 Communication Systems -M&O	\$0	\$0	\$0
31	867 Other Equipment -Labor	\$0	\$0	\$0
32	867 Other Equipment -M&O	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
33	Total Maintenance	<u>\$19,350</u>	<u>\$19,737</u>	<u>\$20,132</u>
34	Total Direct O&M	\$29,350	\$29,937	\$30,536
35	Administrative and General:			
36	Property Insurance @ 0.20%	\$190,586	\$194,398	\$198,286
37	Pensions & Benefits @ 29.73%	<u>\$2,909</u>	<u>\$2,967</u>	<u>\$3,027</u>
38	Total Administrative and General	\$193,495	\$197,365	\$201,312
39	Total Operation & Maintenance Expenses	\$222,845	\$227,302	\$231,848



**Algonquin Gas Transmission Company, LLC**  
**AIM Project - West Roxbury Lateral**  
Depreciation Expense and Other Taxes - West Roxbury Lateral

Line No.	(1) <u>Description</u>	(2) <u>2016</u>	(3) <u>2017</u>	(4) <u>2018</u>
1	Depreciation Expense:			
2	Depreciable Plant	\$95,293,105	\$95,293,105	\$95,293,105
3	Depreciation Rate	<u>6.67%</u>	<u>6.67%</u>	<u>6.67%</u>
4	Depreciation Exp.	\$6,352,874	\$6,352,874	\$6,352,874
5	Taxes Other than Income:			
6	Ad Valorem Taxes:			
7	Gross Plant	\$95,293,105	\$95,293,105	\$95,293,105
8	Ad Valorem Taxes 2.088%	\$1,990,000	\$2,009,900	\$2,029,999
9	Payroll Taxes:			
10	Labor Cost	\$9,783	\$9,979	\$10,179
11	Payroll Taxes 6.540%	\$640	\$653	\$666
12	Total Taxes Other than Income	\$1,990,640	\$2,010,553	\$2,030,665

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - West Roxbury Lateral**  
Rate Base and Return - West Roxbury Lateral

Line No.	(1) Description	(2) 2016	(3) 2017	(4) 2018
1	Rate Base:			
2	Gas Plant in Service	\$95,293,105	\$95,293,105	\$95,293,105
3	Accumulated Depreciation	<u>(\$3,176,437)</u>	<u>(\$9,529,311)</u>	<u>(\$15,882,185)</u>
4	Net Plant	\$92,116,668	\$85,763,794	\$79,410,920
5	Working Capital:			
	Materials & Supplies @ 0.600%	\$571,759	\$583,194	\$594,858
6	Accum. Deferred Income Taxes	<u>\$299,321</u>	<u>\$89,796</u>	<u>(\$757,282)</u>
7	Total Rate Base	\$92,987,748	\$86,436,784	\$79,248,496
8	Return @ 10.370%	\$9,642,829	\$8,963,495	\$8,218,069

**Algonquin Gas Transmission Company, LLC**  
**AIM Project - West Roxbury Lateral**  
Federal and State Income Taxes - West Roxbury Lateral

Line No.	(1) <u>Description</u>	(2) <u>2016</u>	(3) <u>2017</u>	(4) <u>2018</u>
1	Return	\$9,642,829	\$8,963,495	\$8,218,069
2	Adjustments:			
3	Interest and Debt Expense	(\$3,512,147)	(\$3,264,717)	(\$2,993,216)
4	Amortization of Equity AFUDC	<u>\$94,193</u>	<u>\$669,651</u>	<u>\$669,651</u>
5	Total Adjustments	(\$3,417,954)	(\$2,595,066)	(\$2,323,565)
6	Net Taxable Income	\$6,224,875	\$6,368,429	\$5,894,504
7	Federal Income Tax @ 35.00%	\$3,351,856	\$3,429,154	\$3,173,964
8	Pre-FIT (Lines 6 and 7)	\$9,576,731	\$9,797,583	\$9,068,468
9	State Income Tax @ 7.50%	\$776,022	\$793,918	\$734,836

**Rate of Return - Full Project**  
**AIM Project - West Roxbury Lateral**  
Rate of Return - AIM & West Roxbury Lateral

Line <u>No.</u>	(1) <u>Description</u>	(2) Capitalization <u>Ratios</u>	(3) Component <u>Cost</u>	(4) Return <u>Component</u>
1	Long-Term Debt	41.83%	9.03%	3.777%
2	Equity	<u>58.17%</u>	11.33%	<u>6.591%</u>
3	Total	100.00%		10.370%

## **Tariff Sheets – Clean Copy**

**Rate Schedule AFT-1**  
**Firm Transportation Service**

Maximum	Base-----\$/Dth -----	
Reservation Charge:	Tariff	Total
Conversion From:	Rate 1/	Rate
(F-1/WS-1)	\$6.5734	\$6.5734
(F-2/F-3)	\$6.5734	\$6.5734
(F-4)	\$6.5734	\$6.5734
(STB/SS-3)	\$6.5734	\$6.5734
(FTP)	\$11.8368	\$11.8368
(PSS-T)	\$9.7854	\$9.7854
(AFT-2)	\$6.1138	\$6.1138
(AFT-3)	\$10.7554	\$10.7554
(AFT-5)	\$12.6265	\$12.6265
(ITP)	\$13.0110	\$13.0110
(X-35)	\$10.2027	\$10.2027
(X-39)	\$13.2089	\$13.2089
Minimum Reservation Charge:	\$0.0000	\$0.0000

	Base \$/Dth
Maximum Commodity Charge:	Tariff
	Rate 1/ 2/
(F-1/WS-1)	\$0.0112
(F-2/F-3)	\$0.0112
(F-4)	\$0.0112
(STB/SS-3)	\$0.0112
(FTP)	\$0.0000
(PSS-T)	\$0.0000
(AFT-2)	\$0.0000
(AFT-3)	\$0.0000
(AFT-5)	\$0.0000
(ITP)	\$0.0000
(X-35)	\$0.0000
(X-39)	\$0.0000
Minimum Commodity Charge:	
AFT-1 (F-1/WS-1)	\$0.0112
AFT-1 (F-2/F-3)	\$0.0112
AFT-1 (F-4)	\$0.0112
AFT-1 (STB/SS-3)	\$0.0112
AFT-1 (All other)	\$0.0000

	Base \$/Dth
Maximum Authorized Overrun	Tariff
Commodity Charge:	Rate 1/ 2/
(F-1/WS-1)	\$0.2273
(F-2/F-3)	\$0.2273
(F-4)	\$0.2273
(STB/SS-3)	\$0.2273
(FTP)	\$0.3892
(PSS-T)	\$0.3217
(AFT-2)	\$0.2010
(AFT-3)	\$0.3536
(AFT-5)	\$0.4151
(ITP)	\$0.4278
(X-35)	\$0.3354
(X-39)	\$0.4343
Minimum Authorized Overrun	
Commodity Charge:	
AFT-1 (F-1/WS-1)	\$0.0112
AFT-1 (F-2/F-3)	\$0.0112
AFT-1 (F-4)	\$0.0112
AFT-1 (STB/SS-3)	\$0.0112
AFT-1 (All other)	\$0.0000

1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.

2/      Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity  
Surcharge to applicable customers, pursuant to Section 34 of the General Terms and  
Conditions.



**Rate Schedule AFT-1  
 Incremental Capacity Charges  
 Firm Transportation Service**

		CHARGES \$/dth	
APPLICABLE TO CUSTOMERS UTILIZING CAPACITY PURSUANT TO INCREMENTAL FACILITY EXPANSIONS AND IN ADDITION TO THE AFT-1 SYSTEM RATE:		Maximum	Minimum
1. Docket No. CP99-46 (EMI-Tiverton Project):			
Customer	dth		
Calpine Energy Services LP	46,000		
RESERVATION CHARGE		1.6424	0.0000
VOLUMETRIC RESERVATION CHARGE		0.0540	0.0000
2. Docket No. CP01-5 (HubLine Mainline):			
HUBLINE CHARGE APPLICABLE TO CUSTOMERS CONTRACTED FOR TRANSPORTATION PATH AND/OR UTILIZING PRIMARY RECEIPT AND/OR DELIVERY POINTS FROM BEVERLY TO WEYMOUTH, AND IN ADDITION TO THE AFT-1 SYSTEM RATE:		Maximum	Minimum
RESERVATION CHARGE		1.8607	0.0000
VOLUMETRIC RESERVATION CHARGE		0.0612	0.0000
HUBLINE SURCHARGE APPLICABLE TO ALL CUSTOMERS UTILIZING SECONDARY RECEIPT POINTS BETWEEN AND INCLUDING BEVERLY AND WEYMOUTH AND/OR UTILIZING SECONDARY DELIVERY POINTS BETWEEN BEVERLY AND WEYMOUTH, INCLUDING BEVERLY AND EXCLUDING WEYMOUTH, AND IN ADDITION TO OTHER APPLICABLE CHARGES:		Maximum	Minimum
COMMODITY CHARGE 3/		0.0612	0.0000
3. Docket No. CP06-76 (Ramapo Project):			
APPLICABLE TO CUSTOMERS CONTRACTED FOR TRANSPORTATION SERVICE ON FACILITIES CONSTRUCTED UNDER THE RAMAPO PROJECT IN ADDITION TO THE AFT-1 SYSTEM RATE:		CHARGES \$/dth	
RESERVATION CHARGE		Maximum	Minimum
VOLUMETRIC RESERVATION CHARGE		7.5608	0.0000
AUTHORIZED OVERRUN CHARGE		0.2486	0.0000
4. Docket No. CP14-___ (AIM Project):			
APPLICABLE TO CUSTOMERS CONTRACTED FOR TRANSPORTATION SERVICE ON FACILITIES CONSTRUCTED UNDER THE AIM PROJECT		CHARGES \$/dth	
RESERVATION CHARGE		Maximum	Minimum
VOLUMETRIC RESERVATION CHARGE		42.5748	0.1471
AUTHORIZED OVERRUN CHARGE		1.3997	0.0000

1/ The Reservation Charge is the effective rate on file with the Commission excluding adjustments approved by the Commission.

- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions.
- 3/ HubLine surcharges applicable to both the Commodity and Authorized Overrun Charges.

**Rate Schedule AFT-1  
 Firm Transportation Service  
 Capacity Release**

Maximum Reservation Charge:	Base --- \$/Dth --- Tariff Rate 1/	----- Volumetric----- 2/ Base Rate	Total Rate
	(a)	(b)	(c)=(b)
(F-1/WS-1)	\$6.5734	\$0.2161	\$0.2161
(F-2/F-3)	\$6.5734	\$0.2161	\$0.2161
(F-4)	\$6.5734	\$0.2161	\$0.2161
(STB/SS-3)	\$6.5734	\$0.2161	\$0.2161
(FTP)	\$11.8368	\$0.3892	\$0.3892
(PSS-T)	\$9.7854	\$0.3217	\$0.3217
(AFT-2)	\$6.1138	\$0.2010	\$0.2010
(AFT-3)	\$10.7554	\$0.3536	\$0.3536
(AFT-5)	\$12.6265	\$0.4151	\$0.4151
(ITP)	\$13.0110	\$0.4278	\$0.4278
(X-35)	\$10.2027	\$0.3354	\$0.3354
(X-39)	\$13.2089	\$0.4343	\$0.4343
Minimum Reservation Charge:	\$0.0000	\$0.0000	\$0.0000

**Rate Schedule AFT-1S Capacity Release**

Maximum Reservation Charge:	Base --- \$/Dth --- Tariff Rate 1/	----- Volumetric----- 3/ Base Rate	Total Rate
	(a)	(b)	(c)=(b)
(F-1/WS-1)	\$2.6294	\$0.0864	\$0.0864
(F-2/F-3)	\$2.6294	\$0.0864	\$0.0864
(F-4)	\$2.6294	\$0.0864	\$0.0864
(STB/SS-3)	\$2.6294	\$0.0864	\$0.0864
Minimum Reservation Charge	\$0.0000	\$0.0000	\$0.0000

Commodity Charge:	Base \$/Dth 3/ Tariff Rate 1/ 4/
(F-1/WS-1) Maximum	\$0.2273
(F-2/F-3) Maximum	\$0.2273
(F-4) Maximum	\$0.2273
(STB/SS-3) Maximum	\$0.2273
(F-1/WS-1) Minimum	\$0.0112
(F-2/F-3) Minimum	\$0.0112
(F-4) Minimum	\$0.0112
(STB/SS-3) Minimum	\$0.0112

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ The volumetric reservation charges are applicable to capacity releases where Releasing Customer's Notice provides for bids on a volumetric basis, and are exclusive of surcharges and commodity.
- 3/ Reservation charges and commodity charges applicable to capacity released under Rate Schedule AFT-1S and acquired under Rate Schedule AFT-1.
- 4/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions.

**Rate Schedule AFT-CL**  
**Firm Transportation Service**

	Base \$/Dth Tariff Rate 1/ 2/
CANAL LATERAL	
Reservation Charge:	
Maximum	\$2.0858
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.0686
Minimum	\$0.0000
MIDDLETOWN LATERAL	
Reservation Charge:	
Maximum	\$3.2764
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.1077
Minimum	\$0.0000
CLEARY LATERAL	
Reservation Charge:	
Maximum	\$1.4529
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.0478
Minimum	\$0.0000
LAKE ROAD LATERAL	
Reservation Charge:	
Maximum	\$0.6476
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.0213
Minimum	\$0.0000

- 1/ The Base Tariff is the effective rate on file with the Commission excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the AFT-CL Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AFT-CL**  
**Firm Transportation Service**

	Base-----\$/Dth -----	
	Tariff GRI Total	
	Rate 1/ 2/ Adj. Rate	
BRAYTON POINT LATERAL		
Reservation Charge:		
Maximum	\$1.2700	\$1.2700
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0418	\$0.0436
Minimum	\$0.0000	\$0.0018
BELLINGHAM LATERAL		
Reservation Charge:		
Maximum	\$0.9714	\$0.9714
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0319	\$0.0337
Minimum	\$0.0000	\$0.0018
PHELPS DODGE LATERAL		
Reservation Charge:		
Maximum	\$0.0000	\$0.0000
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0166	\$0.0184
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0166	\$0.0184
Minimum	\$0.0000	\$0.0018
MANCHESTER STREET LATERAL		
Reservation Charge:		
Maximum	\$2.4500	\$2.4500
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0805	\$0.0823
Minimum	\$0.0000	\$0.0018

- 1/ The Base Tariff is the effective rate on file with the Commission excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the AFT-CL Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AFT-CL**  
**Firm Transportation Service**

	Base-----	\$/Dth -----	
	Tariff	GRI	Total
	Rate 1/ 2/	Adj.	Rate
CAPE COD LATERAL			
Reservation Charge:			
Maximum	\$9.0501	-	\$9.0501
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.2975	\$0.0000	\$0.2993
Minimum	\$0.0000	\$0.0000	\$0.0018
NORTHEAST GATEWAY LATERAL			
Reservation Charge:			
Maximum	\$4.3449	-	\$4.3449
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.1428	\$0.0000	\$0.1446
Minimum	\$0.0000	\$0.0000	\$0.0018
J-2 FACILITY			
Reservation Charge:			
Maximum	\$4.6346	-	\$4.6346
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.1524	\$0.0000	\$0.1542
Minimum	\$0.0000	\$0.0000	\$0.0018
KLEEN ENERGY LATERAL			
Reservation Charge:			
Maximum	\$1.2247	-	\$1.2247
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.0403	\$0.0000	\$0.0421
Minimum	\$0.0000	\$0.0000	\$0.0018
WEST ROXBURY LATERAL			
Reservation Charge:			
Maximum	\$18.1976	-	\$18.1976
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.5983	\$0.0000	\$0.5983
Minimum	\$0.0000	\$0.0000	\$0.0018

1/ The Base Tariff is the effective rate on file with the Commission excluding adjustments approved by the Commission.

2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the AFT-CL Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.



**Rate Schedule AFT-CL**  
**Capacity Release**

	Base ----- \$/Dth -----Volumetric----- Tariff Rate 1/ (a)	2/ (b)	Total Rate (c) = (b)
CANAL LATERAL			
Reservation Charge:			
Maximum	\$2.0858	\$0.0686	\$0.0686
Minimum	\$0.0000	\$0.0000	\$0.0000
MIDDLETOWN LATERAL			
Reservation Charge:			
Maximum	\$3.2764	\$0.1077	\$0.1077
Minimum	\$0.0000	\$0.0000	\$0.0000
CLEARY LATERAL			
Reservation Charge:			
Maximum	\$1.4529	\$0.0478	\$0.0478
Minimum	\$0.0000	\$0.0000	\$0.0000
LAKE ROAD LATERAL			
Reservation Charge:			
Maximum	\$0.6476	\$0.0213	\$0.0213
Minimum	\$0.0000	\$0.0000	\$0.0000
BRAYTON POINT LATERAL			
Reservation Charge:			
Maximum	\$1.2700	\$0.0418	\$0.0418
Minimum	\$0.0000	\$0.0000	\$0.0000
BELLINGHAM LATERAL			
Reservation Charge:			
Maximum	\$0.9714	\$0.0319	\$0.0319
Minimum	\$0.0000	\$0.0000	\$0.0000
PHELPS DODGE LATERAL			
Reservation Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0000
Minimum	\$0.0000	\$0.0000	\$0.0000
MANCHESTER STREET LATERAL			
Reservation Charge:			
Maximum	\$2.4500	\$0.0805	\$0.0805
Minimum	\$0.0000	\$0.0000	\$0.0000
CAPE COD LATERAL			
Reservation Charge:			
Maximum	\$9.0501	\$0.2975	\$0.2975
Minimum	\$0.0000	\$0.0000	\$0.0000
NORTHEAST GATEWAY LATERAL			
Reservation Charge:			
Maximum	\$4.3449	\$0.1428	\$0.1428
Minimum	\$0.0000	\$0.0000	\$0.0000

1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.

2/ The volumetric reservation charges are applicable to capacity releases where Releasing Customer's Notice provides for bids on a volumetric basis, and are exclusive of surcharges and commodity.

**Rate Schedule AFT-CL**  
**Capacity Release**

	Base ----- \$/Dth -----	Volumetric-----	
Tariff	Base	Total	
Rate 1/ 2/	Rate	Rate	
(a)	(b)	(c) = (b)	
J-2 FACILITY			
Reservation Charge:			
Maximum	\$4.6346	\$0.1524	\$0.1524
Minimum	\$0.0000	\$0.0000	\$0.0000
KLEEN ENERGY LATERAL			
Reservation Charge:			
Maximum	\$1.2247	\$0.0403	\$0.0403
Minimum	\$0.0000	\$0.0000	\$0.0000
WEST ROXBURY LATERAL			
Reservation Charge:			
Maximum	<u>\$18.1976</u>	<u>\$0.5983</u>	<u>\$0.5983</u>
Minimum	<u>\$0.0000</u>	<u>\$0.0000</u>	<u>\$0.0000</u>

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ The volumetric reservation charges are applicable to capacity releases where Releasing Customer's Notice provides for bids on a volumetric basis, and are exclusive of surcharges and commodity.

**Rate Schedule AIT-2**  
**Interruptible Transportation Service**

	Base \$/Dth Tariff <u>Rate 1/ 2/</u>
BRAYTON POINT LATERAL	
Commodity Charge	
Maximum	\$0.0418
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0418
Minimum	\$0.0000
MANCHESTER STREET LATERAL	
Commodity Charge	
Maximum	\$0.0805
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0805
Minimum	\$0.0000
CANAL LATERAL	
Commodity Charge	
Maximum	\$0.0686
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0686
Minimum	\$0.0000
CAPE COD LATERAL	
Commodity Charge	
Maximum	\$0.2975
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.2975
Minimum	\$0.0000
NORTHEAST GATEWAY LATERAL	
Commodity Charge	
Maximum	\$0.1428
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.1428
Minimum	\$0.0000

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AIT-2**  
**Interruptible Transportation Service**

	Base \$/Dth Tariff <u>Rate 1/ 2/</u>
J-2 FACILITY	
Commodity Charge	
Maximum	\$0.1524
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.1524
Minimum	\$0.0000
KLEEN ENERGY LATERAL	
Commodity Charge	
Maximum	\$0.0403
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0403
Minimum	\$0.0000
WEST ROXBURY LATERAL	
Commodity Charge	
Maximum	\$0.5983
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.5983
Minimum	\$0.0000

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

## FUEL REIMBURSEMENT PERCENTAGES

<u>Period</u>	<u>Duration</u>	<u>FRP</u>
SYSTEM SERVICES: 1/		
Winter	December 1 - March 31	0.91%
Spring, Summer And Fall	April 1 - November 30	0.81%
INCREMENTAL RAMAPO SERVICE: 1/		
Winter	December 1 - March 31	2.11%
Spring, Summer And Fall	April 1 - November 30	1.73%
INCREMENTAL AIM SERVICE: 1/		
Winter	December 1 - March 31	2.02%
Spring, Summer And Fall	April 1 - November 30	2.02%

1/ For all receipt points other than Beverly, Meter No. 00215

Fuel Reimbursement Percentages (FRP) pursuant to Section 32 of the General Terms and Conditions of this FERC Gas Tariff.

## **FUEL REIMBURSEMENT PERCENTAGES**

<u>Period</u>	<u>Duration</u>	<u>FRP</u>
SYSTEM SERVICES – BEVERLY RECEIPTS/NON-HUBLINE DELIVERIES:		
Winter	December 1 - March 31	0.62%
Spring, Summer And Fall	April 1 - November 30	0.54%
INCREMENTAL RAMAPO SERVICE – BEVERLY RECEIPTS/NON-HUBLINE DELIVERIES:		
Winter	December 1 - March 31	1.67%
Spring, Summer And Fall	April 1 - November 30	1.38%
INCREMENTAL AIM SERVICE – BEVERLY RECEIPTS/NON-HUBLINE DELIVERIES:		
Winter	December 1 - March 31	1.65%
Spring, Summer And Fall	April 1 - November 30	1.65%

Fuel Reimbursement Percentages (FRP) pursuant to Section 32 of the General Terms and Conditions of this FERC Gas Tariff.

**RATE SCHEDULE AFT-1**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- b. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- c. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence; and
- d. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- e. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R 80095), the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-1.

2. **APPLICABILITY AND CHARACTER OF SERVICE**

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those



points on Algonquin's system as specified in an executed AFT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.6 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided, however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.

- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin

may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.

- 2.5 Unless otherwise specified in the applicable service agreement, services hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.6 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-1 of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-1 Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1 Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable service agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1 Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-1 Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1 Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1 Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus

- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

#### 5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the upstream entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at a rate no greater than .06 multiplied by the scheduled daily quantity.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at

maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Receipt under this Rate Schedule

AFT-1. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.
- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West



Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-1. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-E**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- b. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- c. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence;
- d. Customer has contracted with one or more operators of upstream facilities that interconnect with the Algonquin system (the "Upstream Entity(ies)"), for a sufficient quantity of no-notice transportation services that encompass the right on the part of Customer to increase or decrease its receipts from the Upstream Entity(ies) into designated Points of Receipt on Algonquin's system with no advance notice, up to Customer's MDTQ under this Rate Schedule AFT-E plus fuel as provided for in Section 32 of the General Terms and Conditions of this tariff in the case of increases in receipts, or down to zero in the case of decreases in receipts, without regard to any quantities that Customer previously scheduled on the Upstream Entities, and with no requirement that Customer adhere to a constant rate of flow on the Upstream Entities (the "Upstream Arrangements").
- e. Customer has named a contact party (the "Notice Agent") for the receipt of orders issued in accordance with Section 5 ("Section 5 Orders") of this rate schedule;
- f. Customer has authorized Algonquin to exercise Customer's nomination and scheduling rights under the Upstream Arrangements, if necessary by executing agency instruments satisfactory to the Upstream Entity, to the extent required to permit service under this rate schedule; and
- g. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.

- h. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-E.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-E Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.7 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-E Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided however,

Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.

- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.
- 2.5 Subject to the conditions specified in Section 5 of this Rate Schedule, service hereunder shall encompass the right on the part of Customer to increase deliveries at the Point(s) of Delivery up to the MDTQ and to decrease deliveries at the Point(s) of Delivery without advance notice to Algonquin and without Customer's previously having provided for a concurrent increase or decrease in receipts at the Point(s) of Receipt.
- 2.6 Unless otherwise specified in the applicable service agreement, service hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.7 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based; provided, however, that such additional quantities shall be provided with

the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-E of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-E Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-E Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable service agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-E Service Agreement; plus
  - (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
  - (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
  - (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
  - (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus

- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-E Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-E Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-E Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to

Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.

- 4.2 Delivery of Gas. Based upon the daily quantity scheduled and in accordance with Section 5 herein, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 No-Notice Service. Notwithstanding the quantities nominated by Customer and scheduled by Algonquin hereunder, Customer shall be entitled to increase its deliveries up to the MDDO at any point, up to the MHTQ during any Hour, and up to the MDTQ, or to decrease its deliveries. Provided that all of the operational conditions specified in Section 5 of this rate schedule (the "Section 5 Conditions") are met, Algonquin shall consent to such increase or decrease in deliveries, thereby nullifying any daily scheduling or hourly scheduling penalty that would otherwise be applicable pursuant to Section 23 of the General Terms and Conditions. Furthermore, if the Section 5 Conditions are met, Algonquin will forbear from taking action pursuant to Section 26 of the General Terms and Conditions to reduce deliveries to Customer. If any of the Section 5 Conditions are not met, Algonquin shall not be required to receive or deliver gas in amounts other than the transportation quantities scheduled by Customer, and variations between scheduled quantities and actual deliveries to Customer's meter shall be subject to the assessment of penalties pursuant to Section 23 of the General Terms and Conditions.
- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

## 5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements, including the Upstream Arrangements, with other parties at or upstream of the Point(s) of Receipt where

Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.

- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any Upstream Entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the Upstream Entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The Upstream Arrangements must be in full force and effect; Customer shall not be in default of the Upstream Arrangements; and Customer's rights under the Upstream Arrangements shall be enforceable by Customer or its agents without impairment due to curtailment, force majeure or other reasons.
- 5.5 The Upstream Entity(ies) shall recognize Algonquin's rights as Customer's agent to issue orders ("Section 5 Orders") on Customer's behalf nominating or directing for Customer's account no-notice service as encompassed within the Upstream Arrangements at such levels and at such times as Algonquin determines in its reasonable discretion is required by the Algonquin system to meet the needs of Customer under this rate schedule.
- 5.6 All Upstream Entities involved in all Upstream Arrangements with Customer served under this rate schedule shall deliver to the various points of interconnection between Algonquin's facilities and the facilities of the various Upstream Entities such quantities of gas at such times as Algonquin determines in its reasonable discretion are required by the Algonquin system to meet the needs of Customer under this rate schedule.
- 5.7 Customer's Notice Agent must have complete authority to call upon supplies for Customer's account at such times, in such quantities, and at such locations as Algonquin deems necessary, in its reasonable discretion, to enable Algonquin to provide service as contemplated for Customer under this rate schedule.
- 5.8 All Notice Agents named by Customer under this rate schedule shall execute Section 5 Orders at such locations and at such times as Algonquin determines in its reasonable discretion are necessary to enable Algonquin to provide service as contemplated under Rate Schedules AFT-E and AFT-ES.



- 5.9 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at an hourly rate no greater than .06 multiplied by the scheduled daily quantity.
- 5.10 In the event Customer has multiple upstream no-notice services pursuant to more than one contract, from more than one pipeline, or under more than one rate schedule, Customer shall provide Algonquin a predetermined order of preference for these upstream services. Algonquin shall follow this order of preference in scheduling Customer's upstream no-notice service. Customer may, upon twenty-four hours' written notice to Algonquin, modify this specification of scheduling preferences.
- 5.11 In the event Algonquin issues a Section 5 Order on Customer's behalf, Algonquin shall provide notice as soon as possible to Customer and Customer's Notice Agent by telephone or facsimile and by posting on the Internet Web Site that the Section 5 Order has been issued.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, are available as Secondary Points of Receipt, and the interconnection between the West Roxbury Lateral and Algonquin's mainline under this Rate Schedule AFT-E. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.
- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate

schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway

Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-E. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. INDEMNIFICATION

- 7.1 Customer acknowledges that as a result of Section 5 Orders issued to Customer's Upstream Entity or Notice Agent hereunder, Customer may incur imbalances between receipts and deliveries that will be cashed out at Month's end pursuant to Section 25 of the General Terms and Conditions of this tariff. Algonquin shall provide Customer with notice of an imbalance in a timely manner. Customer shall hold Algonquin harmless and indemnify Algonquin against any claim by Customer or otherwise arising out of the incurrance of imbalances as a result of Algonquin's issuance of Section 5 Orders.
- 7.2 Customer acknowledges that the exercise by Algonquin of its agency authority with respect to the Upstream Arrangements may cause the Upstream Entity to assess imbalance cash-out charges and transportation usage, storage injection, storage withdrawal or other charges against Customer. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's exercise of its agency authority with respect to the Upstream Arrangements hereunder.
- 7.3 Customer acknowledges that Notice Agent's execution of Section 5 Orders may cause upstream transporters or suppliers to assess charges against Customer for gas costs, transportation services, storage services, imbalance cash out or otherwise. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's issuance of Section 5 Orders to the Notice Agent, and the Notice Agent's performance or non-performance of its duties.
- 7.4 Notwithstanding the other provisions of this Section 7, Algonquin is not absolved from liability arising as a result of negligence on the part of Algonquin.

8. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-1S**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer's total MDTQ under all Algonquin firm rate schedules is 10,000 Dth or less per Day;
- b. Customer's sole source of transportation service deliveries is Algonquin;
- c. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- d. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- e. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence; and
- f. Customer has executed a Service Agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- g. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-1S.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-1S Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.7 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-1S Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.

- 2.4 A Customer executing a service agreement under this Rate Schedule AFT-1S has the right to make an election to convert its service in its entirety from firm transportation service under this rate schedule to firm transportation service under Rate Schedule AFT-1 by providing written notice of such election on or before June 1 of any year. As part of such conversion, such converting Customer has the right to reduce its MDTQ to be applicable under Rate Schedule AFT-1 upon such written notice of its election to convert. Such conversion and reduction shall be effective as of November 1 of that year.
- 2.5 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.
- 2.6 Unless otherwise specified in the applicable service agreement, service hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.7 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based; provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-1S of this tariff and

are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff.

The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.

3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-1S Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1S Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1S Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-1S Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1S Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service



Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1S Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement

Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.

- 4.3 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the upstream entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at a rate no greater than .06 multiplied by the scheduled daily quantity.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule

shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception

of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Receipt under this Rate Schedule AFT-1S. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by

Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-1S. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-ES**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer's total MDTQ under all Algonquin firm rate schedules is 10,000 Dth or less per Day;
- b. Customer's sole source of transportation service deliveries is Algonquin;
- c. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- d. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- e. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence;
- f. Customer has contracted with one or more operators of upstream facilities that interconnect with the Algonquin system (the "Upstream Entity(ies)"), for a sufficient quantity of no-notice transportation services that encompass the right on the part of Customer to increase or decrease its receipts from the Upstream Entity(ies) into designated Points of Receipt on Algonquin's system with no advance notice, up to Customer's MDTQ under this Rate Schedule AFT-ES plus fuel as provided for in Section 32 of the General Terms and Conditions of this tariff in the case of increases in receipts, or down to zero in the case of decreases in receipts, without regard to any quantities that Customer previously scheduled on the Upstream Entity(ies), and with no requirement that Customer adhere to a constant rate of flow on the Upstream Entity(ies) (the "Upstream Arrangements");
- g. Customer has named a contact party (the "Notice Agent") for the receipt of orders issued in accordance with Section 5 ("Section 5 Orders") of this rate schedule;
- h. Customer has authorized Algonquin to exercise Customer's nomination and scheduling rights under the Upstream Arrangements, if necessary by executing agency instruments satisfactory to the Upstream Entity, to the extent required to permit service under this rate schedule; and

- i. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- j. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-ES.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-ES Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.8 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver

hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-ES Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.

- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 A Customer executing a service agreement under this Rate Schedule AFT-ES has the right to make an election to convert its service in its entirety from firm transportation service under this rate schedule to firm transportation service under Rate Schedule AFT-E or Rate Schedule AFT-1 by providing written notice of such election on or before June 1 of any year. As part of such conversion, such converting Customer has the right to reduce its MDTQ to be applicable under Rate Schedule AFT-E or Rate Schedule AFT-1 upon such written notice of its election to convert. Such conversion and reduction shall be effective as of November 1 of that year.
- 2.5 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.
- 2.6 Subject to the conditions specified in Section 5 of this Rate Schedule, service hereunder shall encompass the right on the part of Customer to increase deliveries at the Point(s) of Delivery up to the MDTQ and to decrease deliveries at the Point(s) of Delivery without advance notice to Algonquin and without Customer's previously having provided for a concurrent increase or decrease in receipts at the Point(s) of Receipt.



- 2.7 Unless otherwise specified in the applicable service agreement, service hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.8 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based; provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-ES of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-ES Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-ES Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-ES Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-ES Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-ES Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in the applicable Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus

- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled and in accordance with Section 5 herein, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 No-Notice Service. Notwithstanding the quantities nominated by Customer and scheduled by Algonquin hereunder, Customer shall be entitled to increase its deliveries up to the MDDO at any point, up to the MHTQ during any Hour, and up to the MDTQ, or to decrease its deliveries. Provided that all of the operational conditions specified in Section 5 of this rate schedule (the "Section 5 Conditions") are met, Algonquin shall consent to such increase or decrease in deliveries, thereby nullifying any daily scheduling or hourly scheduling penalty that would otherwise be applicable pursuant to Section 23 of the General Terms and Conditions. Furthermore, if the Section 5 Conditions are met, Algonquin will forbear from taking action pursuant to Section 26 of the General Terms and

Conditions to reduce deliveries to Customer. If any of the Section 5 Conditions are not met, Algonquin shall not be required to receive or deliver gas in amounts other than the transportation quantities scheduled by Customer, and variations between scheduled quantities and actual deliveries to Customer's meter shall be subject to the assessment of penalties pursuant to Section 23 of the General Terms and Conditions.

- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements, including the Upstream Arrangements, with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any Upstream Entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the Upstream Entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The Upstream Arrangements must be in full force and effect; Customer shall not be in default of the Upstream Arrangements; and Customer's rights under the Upstream Arrangements shall be enforceable by Customer or its agents without impairment due to curtailment, force majeure or other reasons.
- 5.5 The Upstream Entity(ies) shall recognize Algonquin's rights as Customer's agent to issue orders ("Section 5 Orders") on Customer's behalf nominating or directing for Customer's account no-notice service as encompassed within the Upstream Arrangements at such levels and at such times as Algonquin determines in its

reasonable discretion is required by the Algonquin system to meet the needs of Customer under this rate schedule.

- 5.6 All Upstream Entities involved in all Upstream Arrangements with Customer served under this rate schedule shall deliver to the various points of interconnection between Algonquin's facilities and the facilities of the various Upstream Entities such quantities of gas at such times as Algonquin determines in its reasonable discretion are required by the Algonquin system to meet the needs of Customer under this rate schedule.
- 5.7 Customer's Notice Agent must have complete authority to call upon supplies for Customer's account at such times, in such quantities, and at such locations as Algonquin deems necessary, in its reasonable discretion, to enable Algonquin to provide service as contemplated for Customer under this rate schedule.
- 5.8 All Notice Agents named by Customer under this rate schedule shall execute Section 5 Orders at such locations and at such times as Algonquin determines in its reasonable discretion are necessary to enable Algonquin to provide service as contemplated under Rate Schedules AFT-ES and AFT-E.
- 5.9 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at an hourly rate no greater than .06 multiplied by the scheduled daily quantity.
- 5.10 In the event Customer has multiple upstream no-notice services pursuant to more than one contract, from more than one pipeline, or under more than one rate schedule, Customer shall provide Algonquin a predetermined order of preference for these upstream services. Algonquin shall follow this order of preference in scheduling Customer's upstream no-notice service. Customer may, upon twenty-four hours' written notice to Algonquin, modify this specification of scheduling preferences.
- 5.11 In the event Algonquin issues a Section 5 Order on Customer's behalf, Algonquin shall provide notice as soon as possible to Customer and Customer's Notice Agent by telephone or facsimile and by posting on its Internet Web Site that the Section 5 Order has been issued.

## 6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by

Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through

the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Receipt under this Rate Schedule AFT-ES. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon

termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-ES. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

## 7. INDEMNIFICATION

- 7.1 Customer acknowledges that as a result of Section 5 Orders issued to Customer's Upstream Entity or Notice Agent hereunder, Customer may incur imbalances between receipts and deliveries that will be cashed out at Month's end pursuant to Section 25 of the General Terms and Conditions of this tariff. Algonquin shall provide Customer with notice of an imbalance in a timely manner. Customer shall hold Algonquin harmless and indemnify Algonquin against any claim by Customer or otherwise arising out of the incurrence of imbalances as a result of Algonquin's issuance of Section 5 Orders.
- 7.2 Customer acknowledges that the exercise by Algonquin of its agency authority with respect to the Upstream Arrangements may cause the Upstream Entity to assess imbalance cash-out charges and transportation usage, storage injection, storage withdrawal or other charges against Customer. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's exercise of its agency authority with respect to the Upstream Arrangements hereunder.



- 7.3 Customer acknowledges that Notice Agent's execution of Section 5 Orders may cause upstream transporters or suppliers to assess charges against Customer for gas costs, transportation services, storage services, imbalance cash out or otherwise. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's issuance of Section 5 Orders to the Notice Agent, and the Notice Agent's performance or non-performance of its duties.
- 7.4 Notwithstanding the other provisions of this Section 7, Algonquin is not absolved from liability arising as a result of negligence on the part of Algonquin.

8. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-CL**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer") on that portion of Algonquin's pipeline system known as (1) the Canal Lateral, which shall mean pipeline facilities including pipeline lateral facilities, meter station, and appurtenant facilities which extend from a point on Algonquin's existing mainline interstate natural gas pipeline system in Bourne, Massachusetts, along the north side of the Cape Cod Canal, under the Cape Cod Canal at or near the Bourne/Sandwich town line, and terminating at a point in the town of Sandwich in Barnstable County, Massachusetts, (2) the Middletown Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Glastonbury, Connecticut to a point of interconnection, at the outlet side of the Middletown Meter Station, with facilities constructed by Connecticut Light and Power Company, (3) the Cleary Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Berkley, Massachusetts, under the Taunton River to a point of interconnection, at the outlet side of the Cleary Meter Station, with facilities constructed by Taunton Municipal Lighting Plant, (4) the Lake Road Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Windham County, Connecticut to a point of interconnection, at the outlet side of the Lake Road Meter Station, with facilities constructed by Lake Road Generating Co. LP, (5) the Brayton Point Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Dighton, MA (M&R No. 80034) to a point of interconnection, at the outlet side of the Brayton Point Meter Station, with facilities owned by US Gen New England, Inc. (M&R No. 00090), (6) the Bellingham Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Norfolk County, Massachusetts to a point of interconnection, at the outlet side of the Bellingham Meter Station, with facilities constructed by ANP Bellingham Energy Company, (7) the Phelps Dodge Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in New London County, Connecticut to a point of interconnection at the outlet side of the Phelps Dodge Meter Station, with facilities owned by Phelps Dodge Copper Products Company, (8) the Manchester Street Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities that extend from a point on Algonquin's existing interstate natural gas pipeline system at the head of the G-12 Lateral (M&R No. 80070) to a point of interconnection with facilities owned by USGen New England, Inc.

at the outlet side of the Manchester Street power plant (M&R No. 00087), (9) the Cape Cod Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities that extend from the terminus of Algonquin's Canal Lateral in the town of Sandwich in Barnstable County, Massachusetts, to a point of interconnection with facilities owned by Colonial Gas Company d/b/a KeySpan Energy Delivery New England in the town of Sandwich in Barnstable County, Massachusetts, (10) the Northeast Gateway Lateral, which shall mean pipeline facilities including a pipeline lateral and appurtenant facilities that extend from a point on Algonquin's existing HubLine offshore system in Massachusetts Bay, Massachusetts, to a point of interconnection with the offshore deepwater port facilities owned by Northeast Gateway Energy Bridge, L.L.C., (11) the J-2 Facility, which shall mean pipeline facilities including two parallel pipeline laterals, meter stations and appurtenant facilities that extend from a point on Algonquin's existing interstate natural gas pipeline system at the head of the J-2 Facility (M&R No. 80094) to a point of interconnection with facilities owned by The Boston Gas Company d/b/a National Grid downstream of the Mansfield Street Station (M&R No. 00070), (12) the Kleen Energy Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities that extend from a point on Algonquin's existing Middletown Lateral in the City of Middletown, Connecticut, to a point of interconnection, at the outlet side of the Kleen Energy Meter Station (M&R No. 00833), with the Kleen Energy Power Plant facilities, or (13) the West Roxbury Lateral, which shall mean pipeline facilities including pipeline lateral facilities, meter station, and appurtenant facilities that extend from a point on Algonquin's existing mainline interstate natural gas pipeline system at the head of the West Roxbury Lateral (M&R No. 80104) in the Town of Westwood in Norfolk County, Massachusetts, to a point of interconnection, at the outlet side of the West Roxbury Meter Station, with facilities owned by the Boston Gas Company d/b/a National Grid (M&R No. 00838) when:

- a. Algonquin has placed the Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, Kleen Energy Lateral, or West Roxbury Lateral, as applicable, in service;
- b. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- c. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- d. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence; and

- e. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-CL Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for account of Customer up to Customer's Maximum Daily Transportation Quantity the ("MDTQ") and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement; provided, however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO"), provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall transport and deliver hourly quantities of gas required by Customer up to Customer's MDTQ and, on a cumulative basis in any year, up to Customer's MATQ at those points on Algonquin's system as are specified in an executed AFT-CL Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery a daily quantity exceeding the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.

- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 3 below.
- 2.5 Unless otherwise specified in the applicable Service Agreement, services hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.

3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-CL of this tariff and are hereby incorporated herein. Such rates are subject to change under Sections 33 and 34 of the General Terms & Conditions as well as subject to the provisions of Section 4.3 of this rate schedule. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill. Commencing for the Month in which the AFT-CL Service Agreement is effective, and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Reservation Charge: The charge per Month per Dth of Customer's MDTQ as specified in Customer's executed AFT-CL Service Agreement; plus
  - (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
  - (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
  - (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
  - (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
  - (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less

- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Customer Reimbursement. Customer shall, in addition to the charges referenced above, reimburse Algonquin for the following:

- (a) The costs of any facilities installed by Algonquin with Customer's consent to receive, measure, transport or deliver natural gas for the account of Customer; and
- (b) Any and all filing and approval fees required in connection with Customer's service agreement that Algonquin is obligated to pay to the FERC or any other governmental authority having jurisdiction.

Any reimbursement due Algonquin by Customer pursuant to this Section 3.3 shall be due and payable to Algonquin within ten days of the date of Algonquin's invoice(s) for same.

4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder. Any excess or deficiency in such receipts and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Responsibility for Imbalances. Any imbalance resulting from transportation pursuant to this rate schedule on the Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, Kleen Energy Lateral, or West Roxbury Lateral, as applicable, shall be accounted for under the upstream transportation agreement(s) pursuant to which such gas was delivered to the inlet of the Canal Lateral,

Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, Kleen Energy Lateral, or West Roxbury Lateral, as applicable. No imbalance resolution charges, unauthorized overrun penalties, or scheduling penalties shall be assessed under this rate schedule to the extent that Algonquin has assessed any such charges or penalties under another agreement with respect to the same gas or transaction.

- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any upstream entity involved in handling Customer's gas (other than Algonquin) refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the upstream entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the

parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators on the designated AFT-CL lateral for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment to the Primary Points of Receipt under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In addition, a Replacement Customer may choose only those primary points along the lateral segment on which it contracts for transportation service under the replacement contract, as those lateral segments are set forth in the description of Secondary Points in Section 6.2 below. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the Canal Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt



for service on the Canal Lateral, all interconnections between the Middletown Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Middletown Lateral, all interconnections between the Cleary Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Cleary Lateral, all interconnections between the Lake Road Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Lake Road Lateral, all interconnections between the Brayton Point Lateral facilities of Algonquin and the facilities of other operators including, but not limited to, the tap on the Algonquin G-1 System in Dighton, MA (M&R No. 80034) shall be available for use by Customer as Secondary Points of Receipt for service on the Brayton Point Lateral, all interconnections between the Bellingham Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Bellingham Lateral, all interconnections between the Phelps Dodge Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Phelps Dodge Lateral, all interconnections between the Manchester Street Lateral facilities of Algonquin and the facilities of other operators, including, but not limited to, the head of the G-12 Lateral (M&R No. 80070), shall be available for use by Customer as Secondary Points of Receipt for service on the Manchester Street Lateral, all interconnections between the Cape Cod Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Cape Cod Lateral, all interconnections between the Northeast Gateway Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Northeast Gateway Lateral, all interconnections between the J-2 Facility of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the J-2 Facility, all interconnections between the Kleen Energy Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Kleen Energy Lateral, and all interconnections between the West Roxbury Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the West Roxbury Lateral. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any

Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators on the designated AFT-CL lateral for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment to the Primary Points of Delivery under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In addition, a Replacement Customer may choose only those primary points along the lateral segment on which it contracts for transportation service under the replacement contract, as those lateral segments are set forth in the description of Secondary Points in Section 6.4 below. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the Canal Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Canal Lateral, all interconnections between the Middletown facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Middletown Lateral, all interconnections between the Cleary Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Cleary Lateral, all interconnections between the Lake Road Lateral facilities of Algonquin and the

facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Lake Road Lateral, all interconnections between the Brayton Point Lateral facilities of Algonquin and the facilities of other operators including, but not limited to, the tap on the Algonquin G-1 System in Dighton, MA (M&R 80034) shall be available for use by Customer as Secondary Points of Delivery for service on the Brayton Point Lateral, all interconnections between the Bellingham Lateral facilities of Algonquin and facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Bellingham Lateral, all interconnections between the Phelps Dodge Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Phelps Dodge Lateral, all interconnections between the Manchester Street Lateral facilities of Algonquin and the facilities of other operators, including, but not limited to, the head of the G-12 Lateral (M&R No. 80070), shall be available for use by Customer as Secondary Points of Delivery for service on the Manchester Street Lateral, all interconnections between the Cape Cod Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Cape Cod Lateral, all interconnections between the Northeast Gateway Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Northeast Gateway Lateral, all interconnections between the J-2 Facility of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the J-2 Facility, all interconnections between the Kleen Energy Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Kleen Energy Lateral, and all interconnections between the West Roxbury Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the West Roxbury Lateral. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AIT-1**  
**INTERRUPTIBLE TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for interruptible transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer has made a valid request for interruptible transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part; and
- b. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- c. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AIT-1.

2. **APPLICABILITY AND CHARACTER OF SERVICE**

- 2.1 Transportation service hereunder will be on an interruptible basis. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AIT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement plus amounts reflecting the Fuel Reimbursement Quantity.

- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AIT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"), provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AIT-1 of this FERC Gas Tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AIT-1 Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AIT-I Service Agreement is effective and for each Month thereafter, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus

- (b) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (c) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (d) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (e) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AIT-1 Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AIT-1 Service Agreement is effective and for each Month thereafter, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (b) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (c) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (d) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (e) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of

this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.

- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.3 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt and accepted at the Point(s) of Delivery at a substantially constant hourly rate, or such other hourly rate as may be acceptable to Algonquin.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 All interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Point(s) of Receipt, with the

exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Points of Receipt under this Rate Schedule AIT-1.

- 6.2 All interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Point(s) of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Points of Delivery under this Rate Schedule AIT-1.

## 7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.



**RATE SCHEDULE AIT-2**  
**INTERRUPTIBLE TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for interruptible transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer") on the Brayton Point Lateral, on the Manchester Street Lateral, on the Canal Lateral, on the Cape Cod Lateral, on the Northeast Gateway Lateral, on the J-2 Facility, on the Kleen Energy Lateral, or on the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL, when:

- a. Customer has made a valid request for interruptible transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part; and
- b. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part; and
- c. Customer's service agreement specifies that either the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL, shall be utilized to effectuate service hereunder.

2. **APPLICABILITY AND CHARACTER OF SERVICE**

- 2.1 Transportation service hereunder will be on an interruptible basis. Algonquin shall receive from Customer, or for the account of Customer, at those points on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as specified in Customer's executed AIT-2 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity, if applicable, as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement plus amounts reflecting the Fuel Reimbursement Quantity, if applicable.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, if applicable, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on the

Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as specified in Customer's executed AIT-2 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"), provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ.

- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42 of the General Terms and Conditions of this tariff.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AIT-2 of this FERC Gas Tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate, except as provided in Section 46 of the General Terms and Conditions of Algonquin's FERC Gas Tariff.
- 3.2 Monthly Bill. Commencing for the Month in which the AIT-2 Service Agreement is effective and for each Month thereafter, Algonquin shall charge Customer and Customer shall pay Algonquin the sum of the following amounts:
- (a) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
  - (b) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus

- (c) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (d) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (e) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Responsibility for Imbalances. Any imbalance resulting from transportation transactions pursuant to this rate schedule on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral, as specified on Customer's AIT-2 Service Agreement for which natural gas was received under an upstream transportation agreement(s) on Algonquin's system shall be accounted for under the upstream transportation agreement(s). No imbalance resolution charges, unauthorized overrun penalties, or scheduling penalties shall be assessed under this rate schedule for such transactions to the extent that Algonquin has assessed any such charges or penalties under the upstream transportation agreement(s) with respect to the same gas or transactions.

- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with Algonquin or other parties, as applicable, at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.3 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt and accepted at the Point(s) of Delivery at a substantially constant hourly rate, or such other hourly rate as may be acceptable to Algonquin.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 All interconnections between the Brayton Point Lateral facilities, including, but not limited to, the tap on Algonquin's G-1 System in Dighton, MA (M&R No. 80034); the Manchester Street Lateral facilities, including, but not limited to the head of the G-12 Lateral (M&R No. 80070); the Canal Lateral facilities, including, but not limited to, the interconnection between the Canal Lateral and Algonquin's mainline; the Cape Cod Lateral facilities, including, but not limited to, the interconnection between the Cape Cod Lateral and the Canal Lateral; the Northeast Gateway Lateral facilities, including, but not limited to, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts; the J-2 Facility, including, but not limited to the head of the J-2 Facility (M&R No. 80094); the Kleen Energy Lateral facilities, including, but not limited to, the interconnection between the Kleen Energy Lateral and the Middletown Lateral; or the West Roxbury Lateral facilities, including, but not limited to, the interconnection between the West Roxbury Lateral and Algonquin's mainline, as specified in Customer's executed AIT-2 Service Agreement, and the facilities of other operators shall be available for use by Customer as Point(s) of Receipt.

- 6.2 All interconnections between the Brayton Point Lateral facilities, including, but not limited to, the tap on Algonquin's G-1 System in Dighton, MA (M&R No. 80034); the Manchester Street Lateral facilities, including, but not limited to the head of the G-12 Lateral (M&R No. 80070); the Canal Lateral facilities, including, but not limited to, the interconnection between the Canal Lateral and Algonquin's mainline; the Cape Cod Lateral facilities, including, but not limited to, the interconnection between the Cape Cod Lateral and the Canal Lateral; the Northeast Gateway Lateral facilities, including, but not limited to, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts; the J-2 Facility, including, but not limited to the head of the J-2 Facility (M&R No. 80094); the Kleen Energy Lateral facilities, including, but not limited to, the interconnection between the Kleen Energy Lateral and the Middletown Lateral; or the West Roxbury Lateral facilities, including, but not limited to, the interconnection between the West Roxbury Lateral and Algonquin's mainline, as specified in Customer's executed AIT-2 Service Agreement, and the facilities of other operators shall be available for use by Customer as Point(s) of Delivery.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

## **41. REVENUE CREDITS**

### **41.1 Interruptible Transportation and Park and Loan Service**

- (a) Applicability. The credit available under this Section 41.1 for revenues under Rate Schedules AIT-1 and PAL shall apply to all Service Agreements under firm Part 284 transportation service rate schedules, except for Service Agreements for service on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, and the West Roxbury Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Brayton Point Lateral shall apply only to Service Agreements for service on the Brayton Point Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Manchester Street Lateral shall apply only to Service Agreements for service on the Manchester Street Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Canal Lateral shall apply only to Service Agreements for service on the Canal Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Cape Cod Lateral shall apply only to Service Agreements for service on the Cape Cod Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Northeast Gateway Lateral shall apply only to Service Agreements for service on the Northeast Gateway Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the J-2 Facility shall apply only to Service Agreements for service on the J-2 Facility under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Kleen Energy Lateral shall apply only to Service Agreements for service on the Kleen Energy Lateral under Rate Schedule AFT-CL.
- (b) Basis of the Credit. Revenues to which the credit under this Section 41.1 shall apply ("Eligible Revenues") shall be the revenues actually received by Algonquin under Rate Schedules AIT-1 and PAL or Rate Schedule AIT-2 (for interruptible services that have not been allocated cost of service) that are attributable to commodity charges and authorized overrun charges but not including imbalance resolution charges, scheduling penalties, unauthorized contract overrun penalties, GRI, ACA, revenues attributable to Section 8 of Rate Schedule PAL, or any other such charges or surcharges.

(c) Percentage of Eligible Revenues.

- (i) Rate Schedules AIT-1 and PAL. Beginning with the Month following the Month in which Algonquin's cumulative annual revenues stemming from commodity charges and authorized overrun charges under Rate Schedules AIT-1 and PAL exceed the dollar amount allocated to Rate Schedules AIT-1 and PAL in Algonquin's currently effective rates ("Excess Eligible Revenues"), Algonquin shall credit to current Month invoices under the applicable rate schedules 90% of the Excess Eligible Revenues received during the prior Month. For purposes of determining cumulative annual revenues under Rate Schedules AIT-1 and PAL, the annual period shall commence on May 1 of each year. In the event that two or more maximum rates for service under Rate Schedules AIT-1 and PAL are applicable during the same twelve month period beginning on May 1, the threshold for revenue crediting hereunder shall consist of a time-weighted average of the amounts allocated to Rate Schedules AIT-1 and PAL during the periods when the various AIT-1 and PAL rates are in effect. Algonquin shall retain the remainder of the Eligible Revenues and Excess Eligible Revenues not required to be credited or refunded.
- (ii) Rate Schedule AIT-2. Beginning with the Month following the Month in which Algonquin's cumulative annual revenues stemming from commodity charges and authorized overrun charges under Rate Schedule AIT-2 exceed the dollar amount allocated to Rate Schedule AIT-2 in Algonquin's currently effective rates ("Excess Eligible Revenues"), if any, Algonquin shall credit to current Month invoices under the applicable rate schedules 50% of the Excess Eligible Revenues received during the prior Month. For purposes of determining cumulative annual revenues under Rate Schedule AIT-2, the annual period shall commence on May 1 of each year. In the event that two or more maximum rates for service under Rate Schedule AIT-2 are applicable during the same twelve month period beginning on May 1, the threshold for revenue crediting hereunder shall consist of a time-weighted average of the amounts allocated to Rate Schedule AIT-2 during the periods when the various AIT-2 rates are in effect. Algonquin shall retain the remainder of the Eligible Revenues and Excess Eligible Revenues not required to be credited or refunded.
- (d) Apportionment of Eligible Revenues. Eligible Revenues attributable to a Month shall be apportioned among all Customers under the applicable rate schedules by applying the following ratio for each Customer: (a) the Customer's total MDTQ in effect during that Month under the applicable

rate schedules (b) divided by the summation of the total MDTQs in effect during that Month for all Customers under the applicable rate schedules; provided, however, that no Customer shall receive a credit under this Section 41.1 in excess of its reservation charges under the applicable rate schedules for that Month, with such excess being reallocated to the other Customers under the applicable rate schedule in accordance with the above ratios.

- (e) Credits Subject to Refund. In the event that any revenues credited pursuant to Section 41.1 are subject to refund, and are ultimately required to be refunded to Customers under Rate Schedules AIT-1 and PAL or Rate Schedule AIT-2, Algonquin shall recalculate the revenue credits that would have been due to Customer if the AIT-1 and PAL rates or AIT-2 rate, respectively, used for purposes of the refund computation had been in effect at the time of the required credit, and shall bill Customer for the differences between revenues actually credited, and the recalculated revenue credit, plus interest at the rate prescribed by the Commission's regulations.

#### 41.2 Retained Upstream Capacity Release Credits.

- (a) Applicability. The credit available under this Section 41.2 shall apply to all firm rate schedules except Rate Schedule AFT-CL.
- (b) Basis of the Credit. Revenues to which the credit under this Section 41.2 shall apply ("Eligible Capacity Release Revenues") shall be the revenues actually received by Algonquin that are attributable to demand charges paid by parties to which Algonquin has released upstream capacity rights held by Algonquin, to the extent that the costs of such rights have been reflected in the rates paid by Customers under the rate schedules identified in Section 41.2(a).
- (c) Apportionment of Eligible Capacity Release Revenues. Eligible Revenues attributable to a Month shall be apportioned among all Customers under the applicable rate schedules by applying the following ratio for each Customer: (i) the Customer's total MDTQ in effect during that Month under the applicable rate schedules, (ii) divided by the summation of the total MDTQs in effect during that Month for all Customers under the applicable rate schedules, provided that, in the case of a Customer paying less than the maximum reservation charge during any Month, the Customer's MDTQ for purposes of both (i) and (ii) above shall be reduced in the same proportion as the reservation charge paid bears to the maximum reservation charge.



**FORM OF SERVICE AGREEMENT  
(APPLICABLE TO RATE SCHEDULE AFT-CL)**

Date: \_\_\_\_\_,

Contract No. \_\_\_\_\_

**SERVICE AGREEMENT**

This AGREEMENT is entered into by and between Algonquin Gas Transmission, LLC, ("Algonquin") and \_\_\_\_\_ ("Customer").

WHEREAS, [this and an additional clause(s) may be included to describe the historical or factual context of the Agreement, to describe or identify a precedent agreement, and any other agreements if applicable, between Algonquin and Customer related to the Agreement, and/or to describe or define the facilities necessary to provide service under the Agreement, and will not include binding consideration.]

***[In the event that the capacity was awarded as Interim Capacity pursuant to Section 2.6 of the General Terms and Conditions of the Algonquin Tariff, the following language will be included as a Whereas clause in Customer's Agreement:*** "The service provided to Customer under this Agreement will utilize capacity that was acquired by Customer as Interim Capacity pursuant to the provisions of Section 2.6 of the General Terms and Conditions of the Algonquin Tariff."]

NOW THEREFORE, in consideration of the premises and of the mutual covenants herein contained, the parties do agree as follows:

1. Algonquin shall deliver and Customer shall take and pay for service on Algonquin's [Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, Kleen Energy Lateral, or West Roxbury Lateral, as applicable,] pursuant to the terms of this Agreement and subject to Algonquin's Rate Schedule AFT-CL and the General Terms and Conditions of Algonquin's Tariff, which are incorporated herein by reference and made a part hereof.

***[In the event that a precedent agreement for a new or an expansion project contains credit provisions applicable to Customer's capacity related to such project, the following language shall be included in Customer's Service Agreement.*** "The credit requirements applicable to this Agreement are set forth in that certain Precedent Agreement dated \_\_\_\_\_ between Algonquin and Customer related to this Agreement."]

2. The Maximum Daily Transportation Quantity (MDTQ) and Maximum Annual Transportation Quantity (MATQ) for service under this Agreement and any right to increase or decrease the MDTQ or MATQ during the term of this Agreement are listed on Exhibit C attached hereto. The Point(s) of Receipt and Point(s) of Delivery, respectively, are listed on Exhibits A and B attached hereto. Exhibit(s) A, B, and C are incorporated herein by reference and made a part hereof.
3. This Agreement shall be effective on \_\_\_\_\_ [this blank may include a date certain, a date either earlier or later than a specified date certain based on the completion of construction of facilities necessary to provide service under the Agreement, a date set forth in or established by a relevant order from the Federal Energy Regulatory Commission or a commencement date as defined in a precedent agreement between Customer and Algonquin] and shall continue for a term ending on and including \_\_\_\_\_ [or, when applicable, "shall continue for a term of \_\_\_\_\_ years"] ("Primary Term") and shall continue to be effective from \_\_\_\_\_ to \_\_\_\_\_ thereafter ***[In the event that the capacity was awarded as Interim Capacity pursuant to Section 2.6 of the General Terms and Conditions of the Algonquin Tariff, the following phrase will be included in Customer's Agreement:*** "but in no event beyond \_\_\_\_\_,"] unless and until terminated by Algonquin or Customer upon prior written notice of at

least \_\_\_\_\_ [not less than 1 year for agreements with a primary term of more than 1 year; for service agreements with both a primary term and notice period of exactly one (1) year, the notice must be submitted within ten (10) Business Days of the beginning of the primary term of the service agreement, and at least one (1) year for subsequent notices for such service agreement; and otherwise mutually agreeable]. [In the event that Algonquin and Customer agree to a fixed term, the evergreen and notice of termination language shall be omitted from Customer's Agreement.] This Agreement may be terminated at any time by Algonquin in the event Customer fails to pay part or all of the amount of any bill for service hereunder and such failure continues for thirty days after payment is due; provided Algonquin gives ten days prior written notice to Customer of such termination and provided further such termination shall not be effective if, prior to the date of termination, Customer either pays such outstanding bill or furnishes a good and sufficient surety bond or other form of security reasonably acceptable to Algonquin guaranteeing payment to Algonquin of such outstanding bill; provided that Algonquin shall not be entitled to terminate service pending the resolution of a disputed bill if Customer complies with the billing dispute procedure currently on file in Algonquin's Tariff. Any portions of this Agreement necessary to correct or cash-out imbalances under this Agreement as required by the General Terms and Conditions of Algonquin's Tariff shall survive the other parts of this Agreement until such time as such balancing has been accomplished.

If this Agreement qualifies as a "ROFR Agreement" as defined in the General Terms and Conditions of Algonquin's Tariff, the provision of a termination notice by either Customer or Algonquin, pursuant to the preceding paragraph, a notice of partial reduction in Maximum Daily Transportation Quantity and Maximum Annual Transportation Quantity pursuant to Exhibit C or the expiration of this Agreement of its own terms triggers Customer's right of first refusal under Section 9 of the General Terms and Conditions of Algonquin's Tariff.

***[In the event that the capacity was awarded as Interim Capacity pursuant to Section 2.6 of the General Terms and Conditions of the Algonquin Tariff, the previous paragraph will be replaced with the following language: "This Agreement does not qualify as a ROFR Agreement, as such term is defined in Section 1 of the General Terms and Conditions of the Algonquin Tariff."]***

4. Maximum rates, charges, and fees shall be applicable to service pursuant to this Agreement except during the specified term of a discounted rate or a Negotiated Rate to which Customer and Algonquin have agreed. Provisions governing such discounted rate shall be as specified in the Discount Confirmation to this Agreement. Provisions governing such Negotiated Rate and term shall be as specified on an appropriate Statement of Negotiated Rates filed, with the consent of Customer, as part of Algonquin's Tariff. It is further agreed that Algonquin may seek authorization from the Commission and/or other appropriate body at any time and from time to time to change any rates, charges or other provisions in the applicable Rate Schedule and General Terms and Conditions of Algonquin's Tariff, and Algonquin shall have the right to place such changes in effect in accordance with the Natural Gas Act. Nothing contained herein shall be construed to deny Customer any rights it may have under the Natural Gas Act, including the right to participate fully in rate or other proceedings by intervention or otherwise to contest increased rates in whole or in part.
5. Unless otherwise required in the Tariff, all notices shall be in writing and shall be considered duly delivered when mailed to the applicable address below or transmitted via facsimile. Customer or Algonquin may change the addresses or other information below by written notice to the other without the necessity of amending this Agreement:

Algonquin:

Customer:

6. The interpretation and performance of this Agreement shall be in accordance with the laws of the Commonwealth of Massachusetts, excluding conflicts of law principles that would require the application of the laws of a different jurisdiction.
7. This Agreement supersedes and cancels, as of the effective date of this Agreement, the contract(s) between the parties hereto as described below, if applicable:

[None or an appropriate description]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their respective Officers and/or Representatives thereunto duly authorized to be effective as of the date stated above.

CUSTOMER: \_\_\_\_\_

ALGONQUIN GAS TRANSMISSION, LLC

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

**FORM OF SERVICE AGREEMENT  
(APPLICABLE TO RATE SCHEDULE AIT-2)**

Date: \_\_\_\_\_,

Contract No. \_\_\_\_\_

**SERVICE AGREEMENT**

This AGREEMENT is entered into by and between Algonquin Gas Transmission, LLC, ("Algonquin") and \_\_\_\_\_ ("Customer").

WHEREAS, [this and an additional clause(s) may be included to describe the historical or factual context of the Agreement, to describe or identify a precedent agreement, and any other agreements if applicable, between Algonquin and Customer related to the Agreement, and/or to describe or define the facilities necessary to provide service under the Agreement, and will not include binding consideration.]

NOW THEREFORE, in consideration of the premises and of the mutual covenants herein contained, the parties do agree as follows:

1. Algonquin shall deliver and Customer shall take and pay for service pursuant to the terms of this Agreement and subject to Algonquin's Rate Schedule AIT-2 and the General Terms and Conditions of Algonquin's Tariff, which are incorporated herein by reference and made a part hereof.

***[In the event that a precedent agreement for a new or an expansion project contains credit provisions applicable to Customer's capacity related to such project, the following language shall be included in Customer's Service Agreement. "The credit requirements applicable to this Agreement are set forth in that certain Precedent Agreement dated \_\_\_\_\_ between Algonquin and Customer related to this Agreement."]***

2. Maximum Daily Transportation Quantity \_\_\_\_\_ Dth  
Maximum Annual Transportation Quantity \_\_\_\_\_ Dth
3. Service hereunder will be provided solely by the utilization of capacity on the lateral facility indicated below as such lateral facility is defined in Rate Schedule AFT-CL:

(Check Only One)

Brayton Point Lateral	_____
Manchester Street Lateral	_____
Canal Lateral	_____
Cape Cod Lateral	_____
Northeast Gateway Lateral	_____
J-2 Facility	_____
Kleen Energy Lateral	_____
West Roxbury Lateral	_____

4. This Agreement shall be effective on \_\_\_\_\_ [this blank may include a date certain, a date either earlier or later than a specified date certain based on the completion of construction of facilities necessary to provide service under the Agreement, a date set forth in or established by a relevant order from the Federal Energy Regulatory Commission or a commencement date as defined in a precedent agreement between Customer and Algonquin] and shall continue for a term ending on and including \_\_\_\_\_ [or, when applicable, "shall continue for a term of \_\_\_\_\_ years"] ("Primary Term") and shall continue to be effective from \_\_\_\_\_ to \_\_\_\_\_ thereafter unless and until terminated by Algonquin or Customer upon prior written notice of at least \_\_\_\_\_. This Agreement may be terminated at any time by Algonquin in the event Customer fails to pay part or all of the amount of any bill for service hereunder and

such failure continues for thirty days after payment is due; provided Algonquin gives ten days prior written notice to Customer of such termination and provided further such termination shall not be effective if, prior to the date of termination, Customer either pays such outstanding bill or furnishes a good and sufficient surety bond or other form of security reasonably acceptable to Algonquin guaranteeing payment to Algonquin of such outstanding bill; provided that Algonquin shall not be entitled to terminate service pending the resolution of a disputed bill if Customer complies with the billing dispute procedure currently on file in Algonquin's Tariff. Any portions of this Agreement necessary to correct or cash-out imbalances under this Agreement as required by the General Terms and Conditions of Algonquin's Tariff shall survive the other parts of this Agreement until such time as such balancing has been accomplished.

5. Maximum rates, charges, and fees shall be applicable to service pursuant to this Agreement except during the specified term of a discounted rate or a Negotiated Rate to which Customer and Algonquin have agreed. Provisions governing such discounted rate shall be as specified in the Discount Confirmation to this Agreement. Provisions governing such Negotiated Rate and term shall be as specified on an appropriate Statement of Negotiated Rates filed, with the consent of Customer, as part of Algonquin's Tariff. It is further agreed that Algonquin may seek authorization from the Commission and/or other appropriate body at any time and from time to time to change any rates, charges or other provisions in the applicable Rate Schedule and General Terms and Conditions of Algonquin's Tariff, and Algonquin shall have the right to place such changes in effect in accordance with the Natural Gas Act. Nothing contained herein shall be construed to deny Customer any rights it may have under the Natural Gas Act, including the right to participate fully in rate or other proceedings by intervention or otherwise to contest increased rates in whole or in part.
6. Unless otherwise required in the Tariff, all notices shall be in writing and shall be considered duly delivered when mailed to the applicable address below or transmitted via facsimile. Customer or Algonquin may change the addresses or other information below by written notice to the other without the necessity of amending this Agreement:

Algonquin:

Customer:

7. The interpretation and performance of this Agreement shall be in accordance with the laws of the Commonwealth of Massachusetts, excluding conflicts of law principles that would require the application of the laws of a different jurisdiction.
8. This Agreement supersedes and cancels, as of the effective date of this Agreement, the contract(s) between the parties hereto as described below, if applicable:

[None or an appropriate description]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their respective Officers and/or Representatives thereunto duly authorized to be effective as of the date stated above.

CUSTOMER: \_\_\_\_\_

ALGONQUIN GAS TRANSMISSION, LLC

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

## **Tariff Sheets – Redline Copy**

**Rate Schedule AFT-1**  
**Firm Transportation Service**

Maximum	Base-----\$/Dth -----	
Reservation Charge:	Tariff	Total
Conversion From:	Rate 1/	Rate
(F-1/WS-1)	\$6.5734	\$6.5734
(F-2/F-3)	\$6.5734	\$6.5734
(F-4)	\$6.5734	\$6.5734
(STB/SS-3)	\$6.5734	\$6.5734
(FTP)	\$11.8368	\$11.8368
(PSS-T)	\$9.7854	\$9.7854
(AFT-2)	\$6.1138	\$6.1138
(AFT-3)	\$10.7554	\$10.7554
(AFT-5)	\$12.6265	\$12.6265
(ITP)	\$13.0110	\$13.0110
(X-35)	\$10.2027	\$10.2027
(X-39)	\$13.2089	\$13.2089
Minimum Reservation Charge:	\$0.0000	\$0.0000

	Base \$/Dth
Maximum Commodity Charge:	Tariff
	Rate 1/ 2/
(F-1/WS-1)	\$0.0112
(F-2/F-3)	\$0.0112
(F-4)	\$0.0112
(STB/SS-3)	\$0.0112
(FTP)	\$0.0000
(PSS-T)	\$0.0000
(AFT-2)	\$0.0000
(AFT-3)	\$0.0000
(AFT-5)	\$0.0000
(ITP)	\$0.0000
(X-35)	\$0.0000
(X-39)	\$0.0000
Minimum Commodity Charge:	
AFT-1 (F-1/WS-1)	\$0.0112
AFT-1 (F-2/F-3)	\$0.0112
AFT-1 (F-4)	\$0.0112
AFT-1 (STB/SS-3)	\$0.0112
AFT-1 (All other)	\$0.0000

	Base \$/Dth
Maximum Authorized Overrun	Tariff
Commodity Charge:	Rate 1/ 2/
(F-1/WS-1)	\$0.2273
(F-2/F-3)	\$0.2273
(F-4)	\$0.2273
(STB/SS-3)	\$0.2273
(FTP)	\$0.3892
(PSS-T)	\$0.3217
(AFT-2)	\$0.2010
(AFT-3)	\$0.3536
(AFT-5)	\$0.4151
(ITP)	\$0.4278
(X-35)	\$0.3354
(X-39)	\$0.4343
Minimum Authorized Overrun	
Commodity Charge:	
AFT-1 (F-1/WS-1)	\$0.0112
AFT-1 (F-2/F-3)	\$0.0112
AFT-1 (F-4)	\$0.0112
AFT-1 (STB/SS-3)	\$0.0112
AFT-1 (All other)	\$0.0000

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions.

**Rate Schedule AFT-1  
 Incremental Capacity Charges  
 Firm Transportation Service**

CHARGES  
 \$/dth

APPLICABLE TO CUSTOMERS UTILIZING CAPACITY PURSUANT TO INCREMENTAL FACILITY EXPANSIONS AND IN ADDITION TO THE AFT-1 SYSTEM RATE:

	Maximum	Minimum
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1. Docket No. CP99-46 (EMI-Tiverton Project):

Customer	dth
Calpine Energy Services LP	46,000

RESERVATION CHARGE	1.6424	0.0000
VOLUMETRIC RESERVATION CHARGE	0.0540	0.0000

2. Docket No. CP01-5 (HubLine Mainline):

HUBLINE CHARGE APPLICABLE TO CUSTOMERS CONTRACTED FOR TRANSPORTATION PATH AND/OR UTILIZING PRIMARY RECEIPT AND/OR DELIVERY POINTS FROM BEVERLY TO WEYMOUTH, AND IN ADDITION TO THE AFT-1 SYSTEM RATE:

	Maximum	Minimum
RESERVATION CHARGE	1.8607	0.0000
VOLUMETRIC RESERVATION CHARGE	0.0612	0.0000

USAGE 2/  
 CHARGES  
 \$/dth

HUBLINE SURCHARGE APPLICABLE TO ALL CUSTOMERS UTILIZING SECONDARY RECEIPT POINTS BETWEEN AND INCLUDING BEVERLY AND WEYMOUTH AND/OR UTILIZING SECONDARY DELIVERY POINTS BETWEEN BEVERLY AND WEYMOUTH, INCLUDING BEVERLY AND EXCLUDING WEYMOUTH, AND IN ADDITION TO OTHER APPLICABLE CHARGES:

	Maximum	Minimum
COMMODITY CHARGE 3/	0.0612	0.0000

3. Docket No. CP06-76 (Ramapo Project):

APPLICABLE TO CUSTOMERS CONTRACTED FOR TRANSPORTATION SERVICE ON FACILITIES CONSTRUCTED UNDER THE RAMAPO PROJECT IN ADDITION TO THE AFT-1 SYSTEM RATE:

USERS CONTRACTED FOR TRANSPORTATION SERVICE STRUCTURED UNDER THE RAMAPO PROJECT IN ADDITION TO THE BASIC RATE:	CHARGES \$/dth
	Maximum                      Minimum
RESERVATION CHARGE	7.5608                      0.0000
VOLUMETRIC RESERVATION CHARGE	0.2486                      0.0000
AUTHORIZED OVERRUN CHARGE	0.2486                      0.0000

4. Docket No. CP14- (AIM Project):

<u>APPLICABLE TO CUSTOMERS CONTRACTED FOR TRANSPORTATION SERVICE</u>		<u>CHARGES</u>
<u>ON FACILITIES CONSTRUCTED UNDER THE AIM PROJECT</u>		<u>\$/dth</u>
	<u>Maximum</u>	<u>Minimum</u>
<u>RESERVATION CHARGE</u>	<u>42.5748</u>	<u>0.1471</u>
<u>VOLUMETRIC RESERVATION CHARGE</u>	<u>1.3997</u>	<u>0.0000</u>
<u>AUTHORIZED OVERRUN CHARGE</u>	<u>1.3997</u>	<u>0.0000</u>

1/ The Reservation Charge is the effective rate on file with the Commission excluding adjustments approved by the Commission.



- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions.
- 3/ HubLine surcharges applicable to both the Commodity and Authorized Overrun Charges.

**Rate Schedule AFT-1  
 Firm Transportation Service  
 Capacity Release**

Maximum Reservation Charge:	Base --- \$/Dth --- Tariff Rate 1/ (a)	----- Volumetric----- 2/ Base Rate (b)	Total Rate (c)=(b)
(F-1/WS-1)	\$6.5734	\$0.2161	\$0.2161
(F-2/F-3)	\$6.5734	\$0.2161	\$0.2161
(F-4)	\$6.5734	\$0.2161	\$0.2161
(STB/SS-3)	\$6.5734	\$0.2161	\$0.2161
(FTP)	\$11.8368	\$0.3892	\$0.3892
(PSS-T)	\$9.7854	\$0.3217	\$0.3217
(AFT-2)	\$6.1138	\$0.2010	\$0.2010
(AFT-3)	\$10.7554	\$0.3536	\$0.3536
(AFT-5)	\$12.6265	\$0.4151	\$0.4151
(ITP)	\$13.0110	\$0.4278	\$0.4278
(X-35)	\$10.2027	\$0.3354	\$0.3354
(X-39)	\$13.2089	\$0.4343	\$0.4343
Minimum Reservation Charge:	\$0.0000	\$0.0000	\$0.0000

**Rate Schedule AFT-1S Capacity Release**

Maximum Reservation Charge:	Base --- \$/Dth --- Tariff Rate 1/ (a)	----- Volumetric----- 3/ Base Rate (b)	Total Rate (c)=(b)
(F-1/WS-1)	\$2.6294	\$0.0864	\$0.0864
(F-2/F-3)	\$2.6294	\$0.0864	\$0.0864
(F-4)	\$2.6294	\$0.0864	\$0.0864
(STB/SS-3)	\$2.6294	\$0.0864	\$0.0864
Minimum Reservation Charge	\$0.0000	\$0.0000	\$0.0000

Commodity Charge:	Base \$/Dth 3/ Tariff Rate 1/ 4/
(F-1/WS-1) Maximum	\$0.2273
(F-2/F-3) Maximum	\$0.2273
(F-4) Maximum	\$0.2273
(STB/SS-3) Maximum	\$0.2273
(F-1/WS-1) Minimum	\$0.0112
(F-2/F-3) Minimum	\$0.0112
(F-4) Minimum	\$0.0112
(STB/SS-3) Minimum	\$0.0112

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ The volumetric reservation charges are applicable to capacity releases where Releasing Customer's Notice provides for bids on a volumetric basis, and are exclusive of surcharges and commodity.
- 3/ Reservation charges and commodity charges applicable to capacity released under Rate Schedule AFT-1S and acquired under Rate Schedule AFT-1.
- 4/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions.

**Rate Schedule AFT-CL**  
**Firm Transportation Service**

	Base \$/Dth Tariff Rate 1/ 2/
CANAL LATERAL	
Reservation Charge:	
Maximum	\$2.0858
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.0686
Minimum	\$0.0000
MIDDLETOWN LATERAL	
Reservation Charge:	
Maximum	\$3.2764
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.1077
Minimum	\$0.0000
CLEARY LATERAL	
Reservation Charge:	
Maximum	\$1.4529
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.0478
Minimum	\$0.0000
LAKE ROAD LATERAL	
Reservation Charge:	
Maximum	\$0.6476
Minimum	\$0.0000
Commodity Charge:	
Maximum	\$0.0000
Minimum	\$0.0000
Authorized Overrun Commodity Charge	
Maximum	\$0.0213
Minimum	\$0.0000

- 1/ The Base Tariff is the effective rate on file with the Commission excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the AFT-CL Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AFT-CL**  
**Firm Transportation Service**

	Base-----\$/Dth -----	
	Tariff GRI Total	
	Rate 1/ 2/ Adj. Rate	
BRAYTON POINT LATERAL		
Reservation Charge:		
Maximum	\$1.2700	\$1.2700
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0418	\$0.0436
Minimum	\$0.0000	\$0.0018
BELLINGHAM LATERAL		
Reservation Charge:		
Maximum	\$0.9714	\$0.9714
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0319	\$0.0337
Minimum	\$0.0000	\$0.0018
PHELPS DODGE LATERAL		
Reservation Charge:		
Maximum	\$0.0000	\$0.0000
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0166	\$0.0184
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0166	\$0.0184
Minimum	\$0.0000	\$0.0018
MANCHESTER STREET LATERAL		
Reservation Charge:		
Maximum	\$2.4500	\$2.4500
Minimum	\$0.0000	\$0.0000
Commodity Charge:		
Maximum	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0018
Authorized Overrun		
Commodity Charge		
Maximum	\$0.0805	\$0.0823
Minimum	\$0.0000	\$0.0018

- 1/ The Base Tariff is the effective rate on file with the Commission excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the AFT-CL Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AFT-CL  
 Firm Transportation Service**

	Base-----\$/Dth -----		
	Tariff	GRI	Total
	Rate 1/ 2/	Adj.	Rate
<b>CAPE COD LATERAL</b>			
Reservation Charge:			
Maximum	\$9.0501	-	\$9.0501
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.2975	\$0.0000	\$0.2993
Minimum	\$0.0000	\$0.0000	\$0.0018
<b>NORTHEAST GATEWAY LATERAL</b>			
Reservation Charge:			
Maximum	\$4.3449	-	\$4.3449
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.1428	\$0.0000	\$0.1446
Minimum	\$0.0000	\$0.0000	\$0.0018
<b>J-2 FACILITY</b>			
Reservation Charge:			
Maximum	\$4.6346	-	\$4.6346
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.1524	\$0.0000	\$0.1542
Minimum	\$0.0000	\$0.0000	\$0.0018
<b>KLEEN ENERGY LATERAL</b>			
Reservation Charge:			
Maximum	\$1.2247	-	\$1.2247
Minimum	\$0.0000	-	\$0.0000
Commodity Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0018
Minimum	\$0.0000	\$0.0000	\$0.0018
Authorized Overrun			
Commodity Charge			
Maximum	\$0.0403	\$0.0000	\$0.0421
Minimum	\$0.0000	\$0.0000	\$0.0018
<b><u>WEST ROXBURY LATERAL</u></b>			
<u>Reservation Charge:</u>			
<u>Maximum</u>	<u>\$18.1976</u>	<u>-</u>	<u>\$18.1976</u>
<u>Minimum</u>	<u>\$0.0000</u>	<u>-</u>	<u>\$0.0000</u>
<u>Commodity Charge:</u>			
<u>Maximum</u>	<u>\$0.0000</u>	<u>\$0.0000</u>	<u>\$0.0018</u>
<u>Minimum</u>	<u>\$0.0000</u>	<u>\$0.0000</u>	<u>\$0.0018</u>
<u>Authorized Overrun</u>			
<u>Commodity Charge</u>			
<u>Maximum</u>	<u>\$0.5983</u>	<u>\$0.0000</u>	<u>\$0.5983</u>
<u>Minimum</u>	<u>\$0.0000</u>	<u>\$0.0000</u>	<u>\$0.0018</u>

1/ The Base Tariff is the effective rate on file with the Commission excluding adjustments approved by the Commission.

2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the AFT-CL Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AFT-CL  
 Capacity Release**

	Base ----- \$/Dth -----Volumetric----		
	Tariff	Base	Total
	Rate 1/	Rate	Rate
	(a)	(b)	(c) = (b)
CANAL LATERAL			
Reservation Charge:			
Maximum	\$2.0858	\$0.0686	\$0.0686
Minimum	\$0.0000	\$0.0000	\$0.0000
MIDDLETOWN LATERAL			
Reservation Charge:			
Maximum	\$3.2764	\$0.1077	\$0.1077
Minimum	\$0.0000	\$0.0000	\$0.0000
CLEARY LATERAL			
Reservation Charge:			
Maximum	\$1.4529	\$0.0478	\$0.0478
Minimum	\$0.0000	\$0.0000	\$0.0000
LAKE ROAD LATERAL			
Reservation Charge:			
Maximum	\$0.6476	\$0.0213	\$0.0213
Minimum	\$0.0000	\$0.0000	\$0.0000
BRAYTON POINT LATERAL			
Reservation Charge:			
Maximum	\$1.2700	\$0.0418	\$0.0418
Minimum	\$0.0000	\$0.0000	\$0.0000
BELLINGHAM LATERAL			
Reservation Charge:			
Maximum	\$0.9714	\$0.0319	\$0.0319
Minimum	\$0.0000	\$0.0000	\$0.0000
PHELPS DODGE LATERAL			
Reservation Charge:			
Maximum	\$0.0000	\$0.0000	\$0.0000
Minimum	\$0.0000	\$0.0000	\$0.0000
MANCHESTER STREET LATERAL			
Reservation Charge:			
Maximum	\$2.4500	\$0.0805	\$0.0805
Minimum	\$0.0000	\$0.0000	\$0.0000
CAPE COD LATERAL			
Reservation Charge:			
Maximum	\$9.0501	\$0.2975	\$0.2975
Minimum	\$0.0000	\$0.0000	\$0.0000
NORTHEAST GATEWAY LATERAL			
Reservation Charge:			
Maximum	\$4.3449	\$0.1428	\$0.1428
Minimum	\$0.0000	\$0.0000	\$0.0000

1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.

2/ The volumetric reservation charges are applicable to capacity releases where Releasing Customer's Notice provides for bids on a volumetric basis, and are exclusive of surcharges and commodity.

**Rate Schedule AFT-CL  
 Capacity Release**

	Base ----- \$/Dth -----	Volumetric-----	
Tariff	Base	Total	
Rate 1/ 2/	Rate	Rate	
(a)	(b)	(c) = (b)	
J-2 FACILITY			
Reservation Charge:			
Maximum	\$4.6346	\$0.1524	\$0.1524
Minimum	\$0.0000	\$0.0000	\$0.0000
KLEEN ENERGY LATERAL			
Reservation Charge:			
Maximum	\$1.2247	\$0.0403	\$0.0403
Minimum	\$0.0000	\$0.0000	\$0.0000
<u>WEST ROXBURY LATERAL</u>			
<u>Reservation Charge:</u>			
<u>Maximum</u>	<u>\$18.1976</u>	<u>\$0.5983</u>	<u>\$0.5983</u>
<u>Minimum</u>	<u>\$0.0000</u>	<u>\$0.0000</u>	<u>\$0.0000</u>

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ The volumetric reservation charges are applicable to capacity releases where Releasing Customer's Notice provides for bids on a volumetric basis, and are exclusive of surcharges and commodity.



~~ate~~Rate Schedule AIT-2  
 Interruptible Transportation Service

	Base \$/Dth Tariff <u>Rate 1/ 2/</u>
BRAYTON POINT LATERAL	
Commodity Charge	
Maximum	\$0.0418
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0418
Minimum	\$0.0000
MANCHESTER STREET LATERAL	
Commodity Charge	
Maximum	\$0.0805
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0805
Minimum	\$0.0000
CANAL LATERAL	
Commodity Charge	
Maximum	\$0.0686
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0686
Minimum	\$0.0000
CAPE COD LATERAL	
Commodity Charge	
Maximum	\$0.2975
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.2975
Minimum	\$0.0000
NORTHEAST GATEWAY LATERAL	
Commodity Charge	
Maximum	\$0.1428
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.1428
Minimum	\$0.0000

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

**Rate Schedule AIT-2**  
**Interruptible Transportation Service**

	Base \$/Dth
	Tariff
	Rate 1/ 2/
J-2 FACILITY	
Commodity Charge	
Maximum	\$0.1524
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.1524
Minimum	\$0.0000
KLEEN ENERGY LATERAL	
Commodity Charge	
Maximum	\$0.0403
Minimum	\$0.0000
Authorized Overrun	
Commodity Charge	
Maximum	\$0.0403
Minimum	\$0.0000

<u>WEST ROXBURY LATERAL</u>	
<u>Commodity Charge</u>	
<u>Maximum</u>	<u>\$0.5983</u>
<u>Minimum</u>	<u>\$0.0000</u>
<u>Authorized Overrun</u>	
<u>Commodity Charge</u>	
<u>Maximum</u>	<u>\$0.5983</u>
<u>Minimum</u>	<u>\$0.0000</u>

- 1/ The Base Tariff is the effective rate on file with the Commission, excluding adjustments approved by the Commission.
- 2/ Rate excludes the Annual Charge Adjustment (ACA) Surcharge. The ACA Commodity Surcharge to applicable customers, pursuant to Section 34 of the General Terms and Conditions. The ACA Surcharge will only apply if the Customer has not paid an ACA Surcharge for the same gas volumes transported under another rate schedule.

## FUEL REIMBURSEMENT PERCENTAGES

<u>Period</u>	<u>Duration</u>	<u>FRP</u>
SYSTEM SERVICES: 1/		
Winter	December 1 - March 31	0.91%
Spring, Summer And Fall	April 1 - November 30	0.81%
INCREMENTAL RAMAPO SERVICE: 1/		
Winter	December 1 - March 31	2.11%
Spring, Summer And Fall	April 1 - November 30	1.73%
<u>INCREMENTAL AIM SERVICE: 1/</u>		
<u>Winter</u>	<u>December 1 - March 31</u>	<u>2.02%</u>
<u>Spring, Summer And Fall</u>	<u>April 1 - November 30</u>	<u>2.02%</u>

1/ For all receipt points other than Beverly, Meter No. 00215

Fuel Reimbursement Percentages (FRP) pursuant to Section 32 of the General Terms and Conditions of this FERC Gas Tariff.

## FUEL REIMBURSEMENT PERCENTAGES

<u>Period</u>	<u>Duration</u>	<u>FRP</u>
SYSTEM SERVICES – BEVERLY RECEIPTS/NON-HUBLINE DELIVERIES:		
Winter	December 1 - March 31	0.62%
Spring, Summer And Fall	April 1 - November 30	0.54%

### INCREMENTAL RAMAPO SERVICE – BEVERLY RECEIPTS/NON-HUBLINE DELIVERIES:

Winter	December 1 - March 31	1.67%
Spring, Summer And Fall	April 1 - November 30	1.38%

### INCREMENTAL AIM SERVICE – BEVERLY RECEIPTS/NON-HUBLINE DELIVERIES:

<u>Winter</u>	<u>December 1 - March 31</u>	<u>1.65%</u>
<u>Spring, Summer And Fall</u>	<u>April 1 - November 30</u>	<u>1.65%</u>

Fuel Reimbursement Percentages (FRP) pursuant to Section 32 of the General Terms and Conditions of this FERC Gas Tariff.

**RATE SCHEDULE AFT-1**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- b. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- c. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence; and
- d. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- e. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R 80095), ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-1.

2. **APPLICABILITY AND CHARACTER OF SERVICE**

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those

points on Algonquin's system as specified in an executed AFT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.6 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided, however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.

- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.

- 2.5 Unless otherwise specified in the applicable service agreement, services hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.6 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-1 of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-1 Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1 Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable service agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1 Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-1 Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1 Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1 Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus



- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

#### 5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the upstream entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at a rate no greater than .06 multiplied by the scheduled daily quantity.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such

Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Receipt under this Rate Schedule AFT-1. Such use of Secondary Points

of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.
- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral

facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-1. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-E**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- b. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- c. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence;
- d. Customer has contracted with one or more operators of upstream facilities that interconnect with the Algonquin system (the "Upstream Entity(ies)"), for a sufficient quantity of no-notice transportation services that encompass the right on the part of Customer to increase or decrease its receipts from the Upstream Entity(ies) into designated Points of Receipt on Algonquin's system with no advance notice, up to Customer's MDTQ under this Rate Schedule AFT-E plus fuel as provided for in Section 32 of the General Terms and Conditions of this tariff in the case of increases in receipts, or down to zero in the case of decreases in receipts, without regard to any quantities that Customer previously scheduled on the Upstream Entities, and with no requirement that Customer adhere to a constant rate of flow on the Upstream Entities (the "Upstream Arrangements").
- e. Customer has named a contact party (the "Notice Agent") for the receipt of orders issued in accordance with Section 5 ("Section 5 Orders") of this rate schedule;
- f. Customer has authorized Algonquin to exercise Customer's nomination and scheduling rights under the Upstream Arrangements, if necessary by executing agency instruments satisfactory to the Upstream Entity, to the extent required to permit service under this rate schedule; and
- g. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.



- h. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-E.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-E Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.7 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-E Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of

Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.

- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.
- 2.5 Subject to the conditions specified in Section 5 of this Rate Schedule, service hereunder shall encompass the right on the part of Customer to increase deliveries at the Point(s) of Delivery up to the MDTQ and to decrease deliveries at the Point(s) of Delivery without advance notice to Algonquin and without Customer's previously having provided for a concurrent increase or decrease in receipts at the Point(s) of Receipt.
- 2.6 Unless otherwise specified in the applicable service agreement, service hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.7 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based; provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms



and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-E of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-E Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-E Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable service agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-E Service Agreement; plus
  - (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
  - (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
  - (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
  - (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus

- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-E Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-E Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-E Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of

this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.

- 4.2 Delivery of Gas. Based upon the daily quantity scheduled and in accordance with Section 5 herein, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 No-Notice Service. Notwithstanding the quantities nominated by Customer and scheduled by Algonquin hereunder, Customer shall be entitled to increase its deliveries up to the MDDO at any point, up to the MHTQ during any Hour, and up to the MDTQ, or to decrease its deliveries. Provided that all of the operational conditions specified in Section 5 of this rate schedule (the "Section 5 Conditions") are met, Algonquin shall consent to such increase or decrease in deliveries, thereby nullifying any daily scheduling or hourly scheduling penalty that would otherwise be applicable pursuant to Section 23 of the General Terms and Conditions. Furthermore, if the Section 5 Conditions are met, Algonquin will forbear from taking action pursuant to Section 26 of the General Terms and Conditions to reduce deliveries to Customer. If any of the Section 5 Conditions are not met, Algonquin shall not be required to receive or deliver gas in amounts other than the transportation quantities scheduled by Customer, and variations between scheduled quantities and actual deliveries to Customer's meter shall be subject to the assessment of penalties pursuant to Section 23 of the General Terms and Conditions.
- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements, including the Upstream Arrangements, with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the

Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.

- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any Upstream Entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the Upstream Entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The Upstream Arrangements must be in full force and effect; Customer shall not be in default of the Upstream Arrangements; and Customer's rights under the Upstream Arrangements shall be enforceable by Customer or its agents without impairment due to curtailment, force majeure or other reasons.
- 5.5 The Upstream Entity(ies) shall recognize Algonquin's rights as Customer's agent to issue orders ("Section 5 Orders") on Customer's behalf nominating or directing for Customer's account no-notice service as encompassed within the Upstream Arrangements at such levels and at such times as Algonquin determines in its reasonable discretion is required by the Algonquin system to meet the needs of Customer under this rate schedule.
- 5.6 All Upstream Entities involved in all Upstream Arrangements with Customer served under this rate schedule shall deliver to the various points of interconnection between Algonquin's facilities and the facilities of the various Upstream Entities such quantities of gas at such times as Algonquin determines in its reasonable discretion are required by the Algonquin system to meet the needs of Customer under this rate schedule.
- 5.7 Customer's Notice Agent must have complete authority to call upon supplies for Customer's account at such times, in such quantities, and at such locations as Algonquin deems necessary, in its reasonable discretion, to enable Algonquin to provide service as contemplated for Customer under this rate schedule.
- 5.8 All Notice Agents named by Customer under this rate schedule shall execute Section 5 Orders at such locations and at such times as Algonquin determines in its reasonable discretion are necessary to enable Algonquin to provide service as contemplated under Rate Schedules AFT-E and AFT-ES.

- 5.9 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at an hourly rate no greater than .06 multiplied by the scheduled daily quantity.
- 5.10 In the event Customer has multiple upstream no-notice services pursuant to more than one contract, from more than one pipeline, or under more than one rate schedule, Customer shall provide Algonquin a predetermined order of preference for these upstream services. Algonquin shall follow this order of preference in scheduling Customer's upstream no-notice service. Customer may, upon twenty-four hours' written notice to Algonquin, modify this specification of scheduling preferences.
- 5.11 In the event Algonquin issues a Section 5 Order on Customer's behalf, Algonquin shall provide notice as soon as possible to Customer and Customer's Notice Agent by telephone or facsimile and by posting on the Internet Web Site that the Section 5 Order has been issued.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity

pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or the Kleen Energy~~ Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and the interconnection between the Middletown Lateral and the Kleen Energy Lateral,~~ are available as Secondary Points of Receipt, and the interconnection between the West Roxbury Lateral and Algonquin's mainline under this Rate Schedule AFT-E. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.
- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not



accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or the Kleen Energy~~ Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and the~~ interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between

[the West Roxbury Lateral and Algonquin's mainline](#) are available as Secondary Points of Delivery under this Rate Schedule AFT-E. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. INDEMNIFICATION

- 7.1 Customer acknowledges that as a result of Section 5 Orders issued to Customer's Upstream Entity or Notice Agent hereunder, Customer may incur imbalances between receipts and deliveries that will be cashed out at Month's end pursuant to Section 25 of the General Terms and Conditions of this tariff. Algonquin shall provide Customer with notice of an imbalance in a timely manner. Customer shall hold Algonquin harmless and indemnify Algonquin against any claim by Customer or otherwise arising out of the incurrence of imbalances as a result of Algonquin's issuance of Section 5 Orders.
- 7.2 Customer acknowledges that the exercise by Algonquin of its agency authority with respect to the Upstream Arrangements may cause the Upstream Entity to assess imbalance cash-out charges and transportation usage, storage injection, storage withdrawal or other charges against Customer. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's exercise of its agency authority with respect to the Upstream Arrangements hereunder.
- 7.3 Customer acknowledges that Notice Agent's execution of Section 5 Orders may cause upstream transporters or suppliers to assess charges against Customer for gas costs, transportation services, storage services, imbalance cash out or otherwise. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's issuance of Section 5 Orders to the Notice Agent, and the Notice Agent's performance or non-performance of its duties.
- 7.4 Notwithstanding the other provisions of this Section 7, Algonquin is not absolved from liability arising as a result of negligence on the part of Algonquin.

8. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.



**RATE SCHEDULE AFT-1S**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer's total MDTQ under all Algonquin firm rate schedules is 10,000 Dth or less per Day;
- b. Customer's sole source of transportation service deliveries is Algonquin;
- c. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- d. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- e. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence; and
- f. Customer has executed a Service Agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- g. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-1S.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-1S Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.7 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-1S Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.

- 2.4 A Customer executing a service agreement under this Rate Schedule AFT-1S has the right to make an election to convert its service in its entirety from firm transportation service under this rate schedule to firm transportation service under Rate Schedule AFT-1 by providing written notice of such election on or before June 1 of any year. As part of such conversion, such converting Customer has the right to reduce its MDTQ to be applicable under Rate Schedule AFT-1 upon such written notice of its election to convert. Such conversion and reduction shall be effective as of November 1 of that year.
- 2.5 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.
- 2.6 Unless otherwise specified in the applicable service agreement, service hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.
- 2.7 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based; provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-1S of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff.

The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.

3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-1S Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1S Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1S Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-1S Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-1S Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-1S Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's

right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.

- 4.3 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the upstream entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at a rate no greater than .06 multiplied by the scheduled daily quantity.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt



the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2

Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Receipt under this Rate Schedule AFT-1S. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall



revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-1S. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

## 7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-ES**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer's total MDTQ under all Algonquin firm rate schedules is 10,000 Dth or less per Day;
- b. Customer's sole source of transportation service deliveries is Algonquin;
- c. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- d. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- e. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence;
- f. Customer has contracted with one or more operators of upstream facilities that interconnect with the Algonquin system (the "Upstream Entity(ies)"), for a sufficient quantity of no-notice transportation services that encompass the right on the part of Customer to increase or decrease its receipts from the Upstream Entity(ies) into designated Points of Receipt on Algonquin's system with no advance notice, up to Customer's MDTQ under this Rate Schedule AFT-ES plus fuel as provided for in Section 32 of the General Terms and Conditions of this tariff in the case of increases in receipts, or down to zero in the case of decreases in receipts, without regard to any quantities that Customer previously scheduled on the Upstream Entity(ies), and with no requirement that Customer adhere to a constant rate of flow on the Upstream Entity(ies) (the "Upstream Arrangements");
- g. Customer has named a contact party (the "Notice Agent") for the receipt of orders issued in accordance with Section 5 ("Section 5 Orders") of this rate schedule;
- h. Customer has authorized Algonquin to exercise Customer's nomination and scheduling rights under the Upstream Arrangements, if necessary by executing agency instruments satisfactory to the Upstream Entity, to the extent required to permit service under this rate schedule; and

- i. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- j. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AFT-ES.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-ES Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement, except as provided in Section 2.8 herein below, plus amounts reflecting the Fuel Reimbursement Quantity; provided however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO") plus any applicable Fuel Reimbursement Quantity, provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly

Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AFT-ES Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ, and on any Day a quantity of gas in excess of the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.

- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 A Customer executing a service agreement under this Rate Schedule AFT-ES has the right to make an election to convert its service in its entirety from firm transportation service under this rate schedule to firm transportation service under Rate Schedule AFT-E or Rate Schedule AFT-1 by providing written notice of such election on or before June 1 of any year. As part of such conversion, such converting Customer has the right to reduce its MDTQ to be applicable under Rate Schedule AFT-E or Rate Schedule AFT-1 upon such written notice of its election to convert. Such conversion and reduction shall be effective as of November 1 of that year.
- 2.5 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.
- 2.6 Subject to the conditions specified in Section 5 of this Rate Schedule, service hereunder shall encompass the right on the part of Customer to increase deliveries at the Point(s) of Delivery up to the MDTQ and to decrease deliveries at the Point(s) of Delivery without advance notice to Algonquin and without Customer's previously having provided for a concurrent increase or decrease in receipts at the Point(s) of Receipt.
- 2.7 Unless otherwise specified in the applicable service agreement, service hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.

- 2.8 With respect to existing service agreements resulting from the conversion pursuant to Order No. 636 of sales and storage service under former Rate Schedules F-1, WS-1, STB and SS-3, subject to Algonquin's firm service obligations from primary points of receipt to primary points of delivery Algonquin shall provide service above Customer's MATQ up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based, specified in the executed service agreement multiplied by 365 (366 for a leap year) and, on any Day, Algonquin shall provide service above Customer's current MDTQ for a given season up to but not in excess of the highest MDTQ on which Customer's Reservation Charge during the currently effective term of the service agreement is based; provided, however, that such additional quantities shall be provided with the same priority for purposes of scheduling accorded to service meeting the criteria of Section 48.3(a)(1) of the General Terms and Conditions of this tariff only to the extent these quantities are requested to be scheduled from a receipt point located within the Base Flow Path to a delivery point located within the Base Flow Path, and provided further, that for purposes of Curtailment Customer's maximum daily entitlement shall be the highest MDTQ specified in Customer's executed service agreement during the period of Curtailment. Such additional quantities shall be subject to fuel, the applicable commodity rate and any applicable commodity surcharges.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-ES of this tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AFT-ES Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-ES Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in Customer's executed AFT-ES Service Agreement; plus

- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AFT-ES Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AFT-ES Service Agreement is effective and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Reservation Charge: The charge per Month per Dth of Customer's highest MDTQ during the Contract Year, as specified in the applicable Service Agreement; plus
- (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus



- (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less
- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled and in accordance with Section 5 herein, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 No-Notice Service. Notwithstanding the quantities nominated by Customer and scheduled by Algonquin hereunder, Customer shall be entitled to increase its deliveries up to the MDDO at any point, up to the MHTQ during any Hour, and up to the MDTQ, or to decrease its deliveries. Provided that all of the operational conditions specified in Section 5 of this rate schedule (the "Section 5 Conditions") are met, Algonquin shall consent to such increase or decrease in deliveries, thereby nullifying any daily scheduling or hourly scheduling penalty that would otherwise be applicable pursuant to Section 23 of the General Terms and Conditions. Furthermore, if the Section 5 Conditions are met, Algonquin will forbear from taking action pursuant to Section 26 of the General Terms and Conditions to reduce deliveries to Customer. If any of the Section 5 Conditions are not met, Algonquin shall not be required to receive or deliver gas in amounts other than the transportation quantities scheduled by Customer, and variations between scheduled quantities and actual deliveries to Customer's meter shall be subject to the

assessment of penalties pursuant to Section 23 of the General Terms and Conditions.

- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements, including the Upstream Arrangements, with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any Upstream Entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the Upstream Entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.4 The Upstream Arrangements must be in full force and effect; Customer shall not be in default of the Upstream Arrangements; and Customer's rights under the Upstream Arrangements shall be enforceable by Customer or its agents without impairment due to curtailment, force majeure or other reasons.
- 5.5 The Upstream Entity(ies) shall recognize Algonquin's rights as Customer's agent to issue orders ("Section 5 Orders") on Customer's behalf nominating or directing for Customer's account no-notice service as encompassed within the Upstream Arrangements at such levels and at such times as Algonquin determines in its reasonable discretion is required by the Algonquin system to meet the needs of Customer under this rate schedule.
- 5.6 All Upstream Entities involved in all Upstream Arrangements with Customer served under this rate schedule shall deliver to the various points of interconnection



between Algonquin's facilities and the facilities of the various Upstream Entities such quantities of gas at such times as Algonquin determines in its reasonable discretion are required by the Algonquin system to meet the needs of Customer under this rate schedule.

- 5.7 Customer's Notice Agent must have complete authority to call upon supplies for Customer's account at such times, in such quantities, and at such locations as Algonquin deems necessary, in its reasonable discretion, to enable Algonquin to provide service as contemplated for Customer under this rate schedule.
- 5.8 All Notice Agents named by Customer under this rate schedule shall execute Section 5 Orders at such locations and at such times as Algonquin determines in its reasonable discretion are necessary to enable Algonquin to provide service as contemplated under Rate Schedules AFT-ES and AFT-E.
- 5.9 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt at an hourly rate of 1/24th of the scheduled daily quantity. The daily quantities of natural gas transported shall be accepted at the Point(s) of Delivery at a substantially constant hourly rate or, in the case of service agreements resulting from the conversion pursuant to Order No. 636 of sales entitlements under former Rate Schedules F-1 and WS-1, at an hourly rate no greater than .06 multiplied by the scheduled daily quantity.
- 5.10 In the event Customer has multiple upstream no-notice services pursuant to more than one contract, from more than one pipeline, or under more than one rate schedule, Customer shall provide Algonquin a predetermined order of preference for these upstream services. Algonquin shall follow this order of preference in scheduling Customer's upstream no-notice service. Customer may, upon twenty-four hours' written notice to Algonquin, modify this specification of scheduling preferences.
- 5.11 In the event Algonquin issues a Section 5 Order on Customer's behalf, Algonquin shall provide notice as soon as possible to Customer and Customer's Notice Agent by telephone or facsimile and by posting on its Internet Web Site that the Section 5 Order has been issued.

## 6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of

Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, the Kleen Energy Lateral, or the West Roxbury Lateral as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline,

the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Receipt under this Rate Schedule AFT-ES. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.
- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Secondary Points of Delivery under this Rate Schedule AFT-ES. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

## 7. INDEMNIFICATION

- 7.1 Customer acknowledges that as a result of Section 5 Orders issued to Customer's Upstream Entity or Notice Agent hereunder, Customer may incur imbalances between receipts and deliveries that will be cashed out at Month's end pursuant to Section 25 of the General Terms and Conditions of this tariff. Algonquin shall provide Customer with notice of an imbalance in a timely manner. Customer shall hold Algonquin harmless and indemnify Algonquin against any claim by Customer or otherwise arising out of the incurrence of imbalances as a result of Algonquin's issuance of Section 5 Orders.
- 7.2 Customer acknowledges that the exercise by Algonquin of its agency authority with respect to the Upstream Arrangements may cause the Upstream Entity to assess imbalance cash-out charges and transportation usage, storage injection, storage withdrawal or other charges against Customer. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's exercise of its agency authority with respect to the Upstream Arrangements hereunder.
- 7.3 Customer acknowledges that Notice Agent's execution of Section 5 Orders may cause upstream transporters or suppliers to assess charges against Customer for gas costs, transportation services, storage services, imbalance cash out or otherwise. Customer shall hold Algonquin harmless and indemnify Algonquin against any liability whatsoever from any party whatsoever as a result of Algonquin's issuance of Section 5 Orders to the Notice Agent, and the Notice Agent's performance or non-performance of its duties.

7.4 Notwithstanding the other provisions of this Section 7, Algonquin is not absolved from liability arising as a result of negligence on the part of Algonquin.

8. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AFT-CL**  
**FIRM TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for firm transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer") on that portion of Algonquin's pipeline system known as (1) the Canal Lateral, which shall mean pipeline facilities including pipeline lateral facilities, meter station, and appurtenant facilities which extend from a point on Algonquin's existing mainline interstate natural gas pipeline system in Bourne, Massachusetts, along the north side of the Cape Cod Canal, under the Cape Cod Canal at or near the Bourne/Sandwich town line, and terminating at a point in the town of Sandwich in Barnstable County, Massachusetts, (2) the Middletown Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Glastonbury, Connecticut to a point of interconnection, at the outlet side of the Middletown Meter Station, with facilities constructed by Connecticut Light and Power Company, (3) the Cleary Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Berkley, Massachusetts, under the Taunton River to a point of interconnection, at the outlet side of the Cleary Meter Station, with facilities constructed by Taunton Municipal Lighting Plant, (4) the Lake Road Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Windham County, Connecticut to a point of interconnection, at the outlet side of the Lake Road Meter Station, with facilities constructed by Lake Road Generating Co. LP, (5) the Brayton Point Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station, and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Dighton, MA (M&R No. 80034) to a point of interconnection, at the outlet side of the Brayton Point Meter Station, with facilities owned by US Gen New England, Inc. (M&R No. 00090), (6) the Bellingham Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in Norfolk County, Massachusetts to a point of interconnection, at the outlet side of the Bellingham Meter Station, with facilities constructed by ANP Bellingham Energy Company, (7) the Phelps Dodge Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities which will extend from a point on Algonquin's existing interstate natural gas pipeline system in New London County, Connecticut to a point of interconnection at the outlet side of the Phelps Dodge Meter Station, with facilities owned by Phelps Dodge Copper Products Company, (8) the Manchester Street Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities that extend from a point on Algonquin's existing interstate natural gas pipeline system at the head of the G-12 Lateral (M&R No. 80070) to a point of interconnection with facilities owned by USGen New England, Inc. at the outlet side of the Manchester Street power plant (M&R



No. 00087), (9) the Cape Cod Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities that extend from the terminus of Algonquin's Canal Lateral in the town of Sandwich in Barnstable County, Massachusetts, to a point of interconnection with facilities owned by Colonial Gas Company d/b/a KeySpan Energy Delivery New England in the town of Sandwich in Barnstable County, Massachusetts, (10) the Northeast Gateway Lateral, which shall mean pipeline facilities including a pipeline lateral and appurtenant facilities that extend from a point on Algonquin's existing HubLine offshore system in Massachusetts Bay, Massachusetts, to a point of interconnection with the offshore deepwater port facilities owned by Northeast Gateway Energy Bridge, L.L.C., (11) the J-2 Facility, which shall mean pipeline facilities including two parallel pipeline laterals, meter stations and appurtenant facilities that extend from a point on Algonquin's existing interstate natural gas pipeline system at the head of the J-2 Facility (M&R No. 80094) to a point of interconnection with facilities owned by The Boston Gas Company d/b/a National Grid downstream of the Mansfield Street Station (M&R No. 00070), ~~or~~ (12) the Kleen Energy Lateral, which shall mean pipeline facilities including a pipeline lateral, meter station and appurtenant facilities that extend from a point on Algonquin's existing Middletown Lateral in the City of Middletown, Connecticut, to a point of interconnection, at the outlet side of the Kleen Energy Meter Station (M&R No. 00833), with the Kleen Energy Power Plant facilities, or (13) the West Roxbury Lateral, which shall mean pipeline facilities including pipeline lateral facilities, meter station, and appurtenant facilities that extend from a point on Algonquin's existing mainline interstate natural gas pipeline system at the head of the West Roxbury Lateral (M&R No. 80104) in the Town of Westwood in Norfolk County, Massachusetts, to a point of interconnection, at the outlet side of the West Roxbury Meter Station, with facilities owned by the Boston Gas Company d/b/a National Grid (M&R No. 00838) when:

- a. Algonquin has placed the Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, ~~or~~ Kleen Energy Lateral, or West Roxbury Lateral, as applicable, in service;
- b. Customer has made a valid request for firm transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part;
- c. Sufficient firm capacity is available to effectuate such transportation without any construction of facilities or other investment by Algonquin, or Algonquin has waived this requirement in writing;
- d. The Primary Point(s) of Receipt and Primary Point(s) of Delivery requested by Customer are acceptable to Algonquin from the viewpoint of adequacy of Algonquin's existing facilities to receive and transport Customer's gas with Algonquin's existing firm service taking precedence; and

- e. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.

## 2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on a firm basis except as provided herein and in Sections 16 and 24 of the General Terms and Conditions of this tariff. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AFT-CL Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for account of Customer up to Customer's Maximum Daily Transportation Quantity the ("MDTQ") and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement; provided, however, Algonquin shall not be obligated to, but may at its option, receive at any Point(s) of Receipt on any Day a quantity of gas in excess of the applicable Maximum Daily Receipt Obligation ("MDRO"), provided that, if more than one Customer requests receipts in excess of its MDRO at a Point of Receipt, and the sum of all such requests exceeds the available capacity at such Point of Receipt, Algonquin shall apportion such receipts in excess of MDRO among such Customers pro rata according to the Customers' firm MDROs at the relevant Point of Receipt.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall transport and deliver hourly quantities of gas required by Customer up to Customer's MDTQ and, on a cumulative basis in any year, up to Customer's MATQ at those points on Algonquin's system as are specified in an executed AFT-CL Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"); provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery a daily quantity exceeding the applicable Maximum Daily Delivery Obligation ("MDDO"), provided that, if more than one Customer requests deliveries in excess of its MDDO at a Point of Delivery, and the sum of all such requests exceeds the available capacity at such Point of Delivery, Algonquin shall apportion such deliveries in excess of MDDO among such Customers pro rata according to the Customers' firm MDDOs at the relevant Point of Delivery.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation



service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 3 below.

- 2.5 Unless otherwise specified in the applicable Service Agreement, services hereunder shall be available on any day of the year, subject to Customer's MATQ and MDTQ limitations.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AFT-CL of this tariff and are hereby incorporated herein. Such rates are subject to change under Sections 33 and 34 of the General Terms & Conditions as well as subject to the provisions of Section 4.3 of this rate schedule. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill. Commencing for the Month in which the AFT-CL Service Agreement is effective, and for each Month thereafter unless otherwise specified in the applicable Service Agreement, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Reservation Charge: The charge per Month per Dth of Customer's MDTQ as specified in Customer's executed AFT-CL Service Agreement; plus
  - (b) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
  - (c) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
  - (d) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
  - (e) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
  - (f) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions; less

- (g) Revenue Credit: The revenue credit provided for in Section 41 of the General Terms and Conditions.

3.3 Customer Reimbursement. Customer shall, in addition to the charges referenced above, reimburse Algonquin for the following:

- (a) The costs of any facilities installed by Algonquin with Customer's consent to receive, measure, transport or deliver natural gas for the account of Customer; and
- (b) Any and all filing and approval fees required in connection with Customer's service agreement that Algonquin is obligated to pay to the FERC or any other governmental authority having jurisdiction.

Any reimbursement due Algonquin by Customer pursuant to this Section 3.3 shall be due and payable to Algonquin within ten days of the date of Algonquin's invoice(s) for same.

4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.

- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder. Any excess or deficiency in such receipts and deliveries shall be resolved in accordance with the General Terms and Conditions of this tariff. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.

- 4.3 Responsibility for Imbalances. Any imbalance resulting from transportation pursuant to this rate schedule on the Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, ~~or~~ Kleen Energy Lateral, or West Roxbury Lateral, as applicable, shall be accounted for under the upstream transportation agreement(s) pursuant to which such gas was delivered to the inlet of the Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral,

Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, ~~or~~ Kleen Energy Lateral, or West Roxbury Lateral, as applicable. No imbalance resolution charges, unauthorized overrun penalties, or scheduling penalties shall be assessed under this rate schedule to the extent that Algonquin has assessed any such charges or penalties under another agreement with respect to the same gas or transaction.

- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 Algonquin shall schedule receipts at a Secondary Point of Receipt or deliveries at a Secondary Point of Delivery pursuant to the provisions of Sections 48.2 and 48.3 of the General Terms and Conditions.
- 5.3 To the extent that any upstream entity involved in handling Customer's gas (other than Algonquin) refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. Prior to any reduction or interruption in service due to the failure of the upstream entity to deliver gas on behalf of Customer, Algonquin shall provide notice in a time and manner that is reasonable under then existing conditions. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 (A) Primary Points of Receipt: The Primary Point(s) of Receipt at which Algonquin shall receive gas for transportation under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Primary Point of Receipt the MDRO and receipt pressure obligations. Such exhibit by mutual written agreement may be superseded by a new exhibit which may add or delete specific points or make other changes thereto that the parties deem appropriate. Algonquin shall not accept any proposed Primary Point(s) of

Receipt, or quantity at any Primary Point(s) of Receipt, or change in quantities among Primary Point(s) of Receipt if (a) the resulting aggregate MDROs at all of Customer's Primary Point(s) of Receipt would exceed Customer's MDTQ, or (b) in doing so, in Algonquin's reasonable judgment, Algonquin would impair its ability to satisfy its existing firm obligations to receive gas pursuant to other firm service agreements under which such Point(s) of Receipt are Primary Points of Receipt and to purchase and receive its Company Use Gas at maximum deliverability levels, as such Company Use Gas arrangements exist under agreements effective at the date of Customer's request or reasonably expected by Algonquin to be effective within six months of the request.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators on the designated AFT-CL lateral for use as a Primary Point of Receipt in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Receipt to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment to the Primary Points of Receipt under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In addition, a Replacement Customer may choose only those primary points along the lateral segment on which it contracts for transportation service under the replacement contract, as those lateral segments are set forth in the description of Secondary Points in Section 6.2 below. In the event that Replacement Customer selects a new Primary Point of Receipt that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Receipt, shall revert to the Releasing Customer, and any Primary Points of Receipt granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.2 Secondary Points of Receipt: Notwithstanding the foregoing, all interconnections between the Canal Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Canal Lateral, all interconnections between the Middletown Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Middletown Lateral,

all interconnections between the Cleary Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Cleary Lateral, all interconnections between the Lake Road Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Lake Road Lateral, all interconnections between the Brayton Point Lateral facilities of Algonquin and the facilities of other operators including, but not limited to, the tap on the Algonquin G-1 System in Dighton, MA (M&R No. 80034) shall be available for use by Customer as Secondary Points of Receipt for service on the Brayton Point Lateral, all interconnections between the Bellingham Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Bellingham Lateral, all interconnections between the Phelps Dodge Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Phelps Dodge Lateral, all interconnections between the Manchester Street Lateral facilities of Algonquin and the facilities of other operators, including, but not limited to, the head of the G-12 Lateral (M&R No. 80070), shall be available for use by Customer as Secondary Points of Receipt for service on the Manchester Street Lateral, all interconnections between the Cape Cod Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Cape Cod Lateral, all interconnections between the Northeast Gateway Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Northeast Gateway Lateral, all interconnections between the J-2 Facility of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the J-2 Facility, ~~and~~ all interconnections between the Kleen Energy Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the Kleen Energy Lateral, and all interconnections between the West Roxbury Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the West Roxbury Lateral. Such use of Secondary Points of Receipt is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

- 6.3 (A) Primary Points of Delivery: The Primary Point(s) of Delivery at which Algonquin shall deliver gas for Customer's account under this rate schedule shall be specified in an exhibit to the service agreement executed by Algonquin and Customer. Such exhibit shall specify for each Point of Delivery the MDDO and delivery pressure obligations. Algonquin shall not accept any proposed Primary Point(s) of Delivery, or quantity at any Primary Point(s) of Delivery, or change in quantities among Primary Point(s) of Delivery if the resulting aggregate Primary Point(s) of Delivery if the resulting aggregate MDDOs at all of Customer's Primary Point(s) of Delivery would exceed Customer's MDTQ except to the extent Customer's

MDDOs reflect the conversion of pre-existing entitlements under firm sales agreements.

- (B) A Replacement Customer that acquired capacity pursuant to the capacity release mechanism set forth in Section 14 of the General Terms and Conditions of this tariff or a releasing Customer that has released capacity pursuant to the capacity release mechanism set forth in Section 14 of the GT&C of this tariff may request, subject to the availability of point and path capacity, any interconnection between the facilities of Algonquin and the facilities of other operators on the designated AFT-CL lateral for use as a Primary Point of Delivery in a segmented transaction, provided, however, that Algonquin shall not accept any proposed Primary Point of Delivery to the extent that (a) the resulting aggregate contractual entitlements under the related releasing and replacement contracts along any segment would exceed the MDTQ of the original contract, or (b) the quantities transported along any segment to the Primary Points of Delivery under the resulting aggregate related releasing and replacement contracts would exceed the MDTQ of the original contract. In addition, a Replacement Customer may choose only those primary points along the lateral segment on which it contracts for transportation service under the replacement contract, as those lateral segments are set forth in the description of Secondary Points in Section 6.4 below. In the event that Replacement Customer selects a new Primary Point of Delivery that is located within the acquired contract path, the portion of the path no longer covered by that contract is deemed to be unsubscribed capacity that may be sold by Algonquin for the term of the capacity release agreement. Upon termination of the capacity release agreement, all capacity covered by the original release, including the original Primary Points of Delivery, shall revert to the Releasing Customer, and any Primary Points of Delivery granted during the term of the capacity release agreement shall revert to Algonquin as unsubscribed capacity.

- 6.4 Secondary Points of Delivery: Notwithstanding the foregoing, all interconnections between the Canal Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Canal Lateral, all interconnections between the Middletown facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Middletown Lateral, all interconnections between the Cleary Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Cleary Lateral, all interconnections between the Lake Road Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Lake Road Lateral, all interconnections between the Brayton Point Lateral facilities of Algonquin and the facilities of other operators including, but not limited to, the tap on the Algonquin G-1 System in Dighton, MA (M&R 80034) shall be available for use by Customer as Secondary Points of Delivery for service



on the Brayton Point Lateral, all interconnections between the Bellingham Lateral facilities of Algonquin and facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Bellingham Lateral, all interconnections between the Phelps Dodge Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Phelps Dodge Lateral, all interconnections between the Manchester Street Lateral facilities of Algonquin and the facilities of other operators, including, but not limited to, the head of the G-12 Lateral (M&R No. 80070), shall be available for use by Customer as Secondary Points of Delivery for service on the Manchester Street Lateral, all interconnections between the Cape Cod Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Cape Cod Lateral, all interconnections between the Northeast Gateway Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Northeast Gateway Lateral, all interconnections between the J-2 Facility of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Receipt for service on the J-2 Facility, ~~and~~ all interconnections between the Kleen Energy Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the Kleen Energy Lateral, and all interconnections between the West Roxbury Lateral facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Secondary Points of Delivery for service on the West Roxbury Lateral. Such use of Secondary Points of Delivery is subject to and pursuant to Section 48.2 of the General Terms and Conditions of this FERC Gas Tariff.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AIT-1**  
**INTERRUPTIBLE TRANSPORTATION SERVICE**

1. AVAILABILITY

This rate schedule is available for interruptible transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer"), when:

- a. Customer has made a valid request for interruptible transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part; and
- b. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part.
- c. Transportation service effectuated through capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL is not available under this rate schedule; provided, however that the interconnection between the Brayton Point Lateral and Algonquin's mainline (M&R No. 80035), the interconnection between the Manchester Street Lateral and Algonquin's mainline (M&R No. 80071), the interconnection between the Canal Lateral and Algonquin's mainline (M&R No. 8004), the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline (M&R No. 80095), ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline (M&R No. 80104) are available under this Rate Schedule AIT-1.

2. APPLICABILITY AND CHARACTER OF SERVICE

- 2.1 Transportation service hereunder will be on an interruptible basis. Algonquin shall receive from Customer, or for the account of Customer, at those points on Algonquin's system as specified in an executed AIT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement plus amounts reflecting the Fuel Reimbursement Quantity.



- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on Algonquin's system as are specified in an executed AIT-1 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"), provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ.
- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AIT-1 of this FERC Gas Tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate.
- 3.2 Monthly Bill for Forwardhaul Rates. For Customers executing an AIT-1 Service Agreement for transportation which is not solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AIT-I Service Agreement is effective and for each Month thereafter, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:
- (a) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus

- (b) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (c) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (d) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (e) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions.

3.3 Monthly Bill for Backhaul Rates. For Customers executing an AIT-1 Service Agreement for transportation which is solely a Backhaul transportation arrangement as defined in Section 1 of the General Terms and Conditions, and commencing for the Month in which the AIT-1 Service Agreement is effective and for each Month thereafter, Algonquin shall charge and Customer shall pay Algonquin the sum of the following amounts:

- (a) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month under this rate schedule (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
- (b) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus
- (c) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (d) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (e) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions.

#### 4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of

this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.

- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with other parties at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.3 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt and accepted at the Point(s) of Delivery at a substantially constant hourly rate, or such other hourly rate as may be acceptable to Algonquin.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 All interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Point(s) of Receipt, with the

exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy [Lateral, or the West Roxbury Lateral](#), as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Points of Receipt under this Rate Schedule AIT-1.

- 6.2 All interconnections between the facilities of Algonquin and the facilities of other operators shall be available for use by Customer as Point(s) of Delivery, with the exception of interconnections with the facilities of other operators accessible only through the utilization of capacity on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy [Lateral, or the West Roxbury Lateral](#), as such lateral facilities are defined in Rate Schedule AFT-CL; provided, however, that the interconnection between the Brayton Point Lateral and Algonquin's mainline, the interconnection between the Manchester Street Lateral and Algonquin's mainline, the interconnection between the Canal Lateral and Algonquin's mainline, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts, the interconnection between the J-2 Facility and Algonquin's mainline, ~~and~~ the interconnection between the Middletown Lateral and the Kleen Energy Lateral, and the interconnection between the West Roxbury Lateral and Algonquin's mainline are available as Points of Delivery under this Rate Schedule AIT-1.

## 7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

**RATE SCHEDULE AIT-2**  
**INTERRUPTIBLE TRANSPORTATION SERVICE**

1. **AVAILABILITY**

This rate schedule is available for interruptible transportation of natural gas by Algonquin Gas Transmission, LLC (hereinafter called "Algonquin") for any party (hereinafter called "Customer") on the Brayton Point Lateral, on the Manchester Street Lateral, on the Canal Lateral, on the Cape Cod Lateral, on the Northeast Gateway Lateral, on the J-2 Facility, ~~or~~ on the Kleen Energy Lateral, or on the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL, when:

- a. Customer has made a valid request for interruptible transportation pursuant to Section 2 of the General Terms and Conditions of this FERC Gas Tariff of which this rate schedule is a part; and
- b. Customer has executed a service agreement in the form contained in the FERC Gas Tariff of which this rate schedule is a part; and
- c. Customer's service agreement specifies that either the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as such lateral facilities are defined in Rate Schedule AFT-CL, shall be utilized to effectuate service hereunder.

2. **APPLICABILITY AND CHARACTER OF SERVICE**

- 2.1 Transportation service hereunder will be on an interruptible basis. Algonquin shall receive from Customer, or for the account of Customer, at those points on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as specified in Customer's executed AIT-2 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Receipt") for transportation hereunder daily quantities of gas tendered for the account of Customer up to Customer's Maximum Daily Transportation Quantity ("MDTQ") plus an amount reflecting the Fuel Reimbursement Quantity, if applicable, as defined in Section 32 of the General Terms and Conditions of this tariff and, on a cumulative basis in any year, up to Customer's Maximum Annual Transportation Quantity ("MATQ") as specified in the service agreement plus amounts reflecting the Fuel Reimbursement Quantity, if applicable.
- 2.2 Upon receipt of such natural gas for Customer's account, Algonquin shall, after making allowance for the Fuel Reimbursement Quantity, if applicable, transport and deliver hourly quantities of gas required by Customer up to Customer's Maximum Hourly Transportation Quantity ("MHTQ") at those points on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape

Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as specified in Customer's executed AIT-2 Service Agreement between Customer and Algonquin (hereinafter referred to as "Point(s) of Delivery"), provided, however, Algonquin shall not be obligated to, but may at its option, deliver at any Point(s) of Delivery an hourly quantity exceeding the MHTQ.

- 2.3 Provided such quantities have been scheduled in accordance with Section 23 of the General Terms and Conditions, Customer may tender quantities of gas in excess of the MDTQ plus any applicable Fuel Reimbursement Quantity on any Day if in Algonquin's reasonable judgment transportation of such gas can be accomplished by Algonquin without detriment to any other Customer under any of Algonquin's rate schedules. Such excess quantities shall be deemed to be Authorized Overrun Quantities.
- 2.4 Algonquin shall not be obligated to add any facilities or expand the capacity of Algonquin's pipeline system in any manner in order to provide transportation service to Customer pursuant to this rate schedule; provided, however, Algonquin may, at its option, and with Customer's consent, add facilities or expand capacity to provide such transportation service, subject to Section 42 of the General Terms and Conditions of this tariff.

### 3. RATE

- 3.1 Unit Rates. The applicable maximum and minimum unit rates are set forth in the currently effective Statement of Rates for Rate Schedule AIT-2 of this FERC Gas Tariff and are hereby incorporated herein. Such rates are subject to adjustment pursuant to Section 33 and Section 34 of the General Terms and Conditions of this tariff. The applicable unit rates to be charged on any Day by Algonquin for gas delivered to Customer shall not be in excess of the maximum unit rate nor less than the minimum unit rate, except as provided in Section 46 of the General Terms and Conditions of Algonquin's FERC Gas Tariff.
- 3.2 Monthly Bill. Commencing for the Month in which the AIT-2 Service Agreement is effective and for each Month thereafter, Algonquin shall charge Customer and Customer shall pay Algonquin the sum of the following amounts:
- (a) Commodity Charge: The applicable commodity rate multiplied by the quantity of gas delivered in the Month (excluding Authorized Overrun Quantities) at the Point(s) of Delivery; plus
  - (b) Authorized Overrun Charge: The applicable authorized overrun charge per Dth of Authorized Overrun Quantity delivered to Customer for the Month under this rate schedule; plus



- (c) Imbalance Resolution Charges: The applicable imbalance resolution charges assessed pursuant to Section 25 of the General Terms and Conditions; plus
- (d) Scheduling Penalties: The applicable scheduling penalties assessed pursuant to Section 23 of the General Terms and Conditions; plus
- (e) Unauthorized Contract Overrun Penalties: The applicable unauthorized contract overrun penalties assessed pursuant to Section 31 of the General Terms and Conditions.

4. NOMINATIONS AND SCHEDULING OF RECEIPTS AND DELIVERIES

- 4.1 Nominations and Scheduling. If Customer desires transportation of natural gas on any Day under this rate schedule, Customer shall provide a nomination to Algonquin in accordance with Section 22 of the General Terms and Conditions of this tariff. Based upon the nomination of Customer, Algonquin shall schedule receipts and deliveries of gas in accordance with the General Terms and Conditions. It is the responsibility of Customer to adjust its deliveries and receipts to conform to the scheduled quantities.
- 4.2 Delivery of Gas. Based upon the daily quantity scheduled, Algonquin shall make daily delivery of Customer's scheduled quantity taking into account the Fuel Reimbursement Quantity. It is the intention of Algonquin that daily deliveries of gas at the Point(s) of Delivery by Algonquin hereunder shall be as nearly equal as possible to daily receipts of gas at the Point(s) of Receipt by Algonquin for transportation hereunder, less the applicable Fuel Reimbursement Quantity. Any excess or deficiency in such receipts, less the applicable Fuel Reimbursement Quantity, and deliveries shall be resolved in accordance with the General Terms and Conditions. Nothing in this rate schedule shall limit Algonquin's right to take actions pursuant to Section 26 of the General Terms and Conditions of this tariff.
- 4.3 Responsibility for Imbalances. Any imbalance resulting from transportation transactions pursuant to this rate schedule on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~or~~ the Kleen Energy Lateral, or the West Roxbury Lateral, as specified on Customer's AIT-2 Service Agreement for which natural gas was received under an upstream transportation agreement(s) on Algonquin's system shall be accounted for under the upstream transportation agreement(s). No imbalance resolution charges, unauthorized overrun penalties, or scheduling penalties shall be assessed under this rate schedule for such transactions to the extent that Algonquin has assessed any such charges or penalties under the upstream transportation agreement(s) with respect to the same gas or transactions.

- 4.4 Commingling of Gas. From the time the natural gas is received by Algonquin at the Point(s) of Receipt, Algonquin shall have the unqualified right to commingle such natural gas with other gas in Algonquin's system.

5. OTHER OPERATING CONDITIONS

Algonquin's obligation to provide service under this rate schedule is subject to the following conditions being satisfied:

- 5.1 Customer shall make all necessary arrangements with Algonquin or other parties, as applicable, at or upstream of the Point(s) of Receipt where Customer tenders gas to Algonquin for transportation, and at or downstream of the Point(s) of Delivery where Algonquin delivers gas for Customer's account, and such arrangements must be compatible with Algonquin's system operations.
- 5.2 To the extent that any upstream entity involved in handling Customer's gas refuses or is unable to deliver gas to Algonquin, Algonquin shall not be required to continue deliveries of gas on behalf of Customer. To the extent that any downstream entity involved in handling Customer's gas refuses or is unable to receive gas from Algonquin, Algonquin shall have the right to reduce deliveries of gas on behalf of Customer.
- 5.3 The daily quantities of natural gas transported shall be delivered at the Point(s) of Receipt and accepted at the Point(s) of Delivery at a substantially constant hourly rate, or such other hourly rate as may be acceptable to Algonquin.

6. POINT(S) OF RECEIPT AND DELIVERY

- 6.1 All interconnections between the Brayton Point Lateral facilities, including, but not limited to, the tap on Algonquin's G-1 System in Dighton, MA (M&R No. 80034); the Manchester Street Lateral facilities, including, but not limited to the head of the G-12 Lateral (M&R No. 80070); the Canal Lateral facilities, including, but not limited to, the interconnection between the Canal Lateral and Algonquin's mainline; the Cape Cod Lateral facilities, including, but not limited to, the interconnection between the Cape Cod Lateral and the Canal Lateral; the Northeast Gateway Lateral facilities, including, but not limited to, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts; the J-2 Facility, including, but not limited to the head of the J-2 Facility (M&R No. 80094); ~~or~~ the Kleen Energy Lateral facilities, including, but not limited to, the interconnection between the Kleen Energy Lateral and the Middletown Lateral; or the West Roxbury Lateral facilities, including, but not limited to, the interconnection between the West Roxbury Lateral and Algonquin's mainline, as specified in Customer's executed AIT-2 Service Agreement, and the facilities of other operators shall be available for use by Customer as Point(s) of Receipt.



- 6.2 All interconnections between the Brayton Point Lateral facilities, including, but not limited to, the tap on Algonquin's G-1 System in Dighton, MA (M&R No. 80034); the Manchester Street Lateral facilities, including, but not limited to the head of the G-12 Lateral (M&R No. 80070); the Canal Lateral facilities, including, but not limited to, the interconnection between the Canal Lateral and Algonquin's mainline; the Cape Cod Lateral facilities, including, but not limited to, the interconnection between the Cape Cod Lateral and the Canal Lateral; the Northeast Gateway Lateral facilities, including, but not limited to, the interconnection between the Northeast Gateway Lateral and the HubLine offshore system in Massachusetts Bay, Massachusetts; the J-2 Facility, including, but not limited to the head of the J-2 Facility (M&R No. 80094); ~~or~~ the Kleen Energy Lateral facilities, including, but not limited to, the interconnection between the Kleen Energy Lateral and the Middletown Lateral; or the West Roxbury Lateral facilities, including, but not limited to, the interconnection between the West Roxbury Lateral and Algonquin's mainline, as specified in Customer's executed AIT-2 Service Agreement, and the facilities of other operators shall be available for use by Customer as Point(s) of Delivery.

7. GENERAL TERMS AND CONDITIONS

The applicable General Terms and Conditions of this FERC Gas Tariff are hereby made a part of this rate schedule.

## 41. REVENUE CREDITS

### 41.1 Interruptible Transportation and Park and Loan Service

- (a) Applicability. The credit available under this Section 41.1 for revenues under Rate Schedules AIT-1 and PAL shall apply to all Service Agreements under firm Part 284 transportation service rate schedules, except for Service Agreements for service on the Brayton Point Lateral, the Manchester Street Lateral, the Canal Lateral, the Cape Cod Lateral, the Northeast Gateway Lateral, the J-2 Facility, ~~and~~ the Kleen Energy Lateral, and the West Roxbury Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Brayton Point Lateral shall apply only to Service Agreements for service on the Brayton Point Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Manchester Street Lateral shall apply only to Service Agreements for service on the Manchester Street Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Canal Lateral shall apply only to Service Agreements for service on the Canal Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Cape Cod Lateral shall apply only to Service Agreements for service on the Cape Cod Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Northeast Gateway Lateral shall apply only to Service Agreements for service on the Northeast Gateway Lateral under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the J-2 Facility shall apply only to Service Agreements for service on the J-2 Facility under Rate Schedule AFT-CL. The credit available under this Section 41 for revenues under Rate Schedule AIT-2 attributable to service on the Kleen Energy Lateral shall apply only to Service Agreements for service on the Kleen Energy Lateral under Rate Schedule AFT-CL.
- (b) Basis of the Credit. Revenues to which the credit under this Section 41.1 shall apply ("Eligible Revenues") shall be the revenues actually received by Algonquin under Rate Schedules AIT-1 and PAL or Rate Schedule AIT-2 (for interruptible services that have not been allocated cost of service) that are attributable to commodity charges and authorized overrun charges but not including imbalance resolution charges, scheduling penalties, unauthorized contract overrun penalties, GRI, ACA, revenues attributable to Section 8 of Rate Schedule PAL, or any other such charges or surcharges.

(c) Percentage of Eligible Revenues.

- (i) Rate Schedules AIT-1 and PAL. Beginning with the Month following the Month in which Algonquin's cumulative annual revenues stemming from commodity charges and authorized overrun charges under Rate Schedules AIT-1 and PAL exceed the dollar amount allocated to Rate Schedules AIT-1 and PAL in Algonquin's currently effective rates ("Excess Eligible Revenues"), Algonquin shall credit to current Month invoices under the applicable rate schedules 90% of the Excess Eligible Revenues received during the prior Month. For purposes of determining cumulative annual revenues under Rate Schedules AIT-1 and PAL, the annual period shall commence on May 1 of each year. In the event that two or more maximum rates for service under Rate Schedules AIT-1 and PAL are applicable during the same twelve month period beginning on May 1, the threshold for revenue crediting hereunder shall consist of a time-weighted average of the amounts allocated to Rate Schedules AIT-1 and PAL during the periods when the various AIT-1 and PAL rates are in effect. Algonquin shall retain the remainder of the Eligible Revenues and Excess Eligible Revenues not required to be credited or refunded.
- (ii) Rate Schedule AIT-2. Beginning with the Month following the Month in which Algonquin's cumulative annual revenues stemming from commodity charges and authorized overrun charges under Rate Schedule AIT-2 exceed the dollar amount allocated to Rate Schedule AIT-2 in Algonquin's currently effective rates ("Excess Eligible Revenues"), if any, Algonquin shall credit to current Month invoices under the applicable rate schedules 50% of the Excess Eligible Revenues received during the prior Month. For purposes of determining cumulative annual revenues under Rate Schedule AIT-2, the annual period shall commence on May 1 of each year. In the event that two or more maximum rates for service under Rate Schedule AIT-2 are applicable during the same twelve month period beginning on May 1, the threshold for revenue crediting hereunder shall consist of a time-weighted average of the amounts allocated to Rate Schedule AIT-2 during the periods when the various AIT-2 rates are in effect. Algonquin shall retain the remainder of the Eligible Revenues and Excess Eligible Revenues not required to be credited or refunded.
- (d) Apportionment of Eligible Revenues. Eligible Revenues attributable to a Month shall be apportioned among all Customers under the applicable rate schedules by applying the following ratio for each Customer: (a) the Customer's total MDTQ in effect during that Month under the applicable rate schedules (b) divided by the summation of the total MDTQs in effect

during that Month for all Customers under the applicable rate schedules; provided, however, that no Customer shall receive a credit under this Section 41.1 in excess of its reservation charges under the applicable rate schedules for that Month, with such excess being reallocated to the other Customers under the applicable rate schedule in accordance with the above ratios.

- (e) Credits Subject to Refund. In the event that any revenues credited pursuant to Section 41.1 are subject to refund, and are ultimately required to be refunded to Customers under Rate Schedules AIT-1 and PAL or Rate Schedule AIT-2, Algonquin shall recalculate the revenue credits that would have been due to Customer if the AIT-1 and PAL rates or AIT-2 rate, respectively, used for purposes of the refund computation had been in effect at the time of the required credit, and shall bill Customer for the differences between revenues actually credited, and the recalculated revenue credit, plus interest at the rate prescribed by the Commission's regulations.

#### 41.2 Retained Upstream Capacity Release Credits.

- (a) Applicability. The credit available under this Section 41.2 shall apply to all firm rate schedules except Rate Schedule AFT-CL.
- (b) Basis of the Credit. Revenues to which the credit under this Section 41.2 shall apply ("Eligible Capacity Release Revenues") shall be the revenues actually received by Algonquin that are attributable to demand charges paid by parties to which Algonquin has released upstream capacity rights held by Algonquin, to the extent that the costs of such rights have been reflected in the rates paid by Customers under the rate schedules identified in Section 41.2(a).
- (c) Apportionment of Eligible Capacity Release Revenues. Eligible Revenues attributable to a Month shall be apportioned among all Customers under the applicable rate schedules by applying the following ratio for each Customer: (i) the Customer's total MDTQ in effect during that Month under the applicable rate schedules, (ii) divided by the summation of the total MDTQs in effect during that Month for all Customers under the applicable rate schedules, provided that, in the case of a Customer paying less than the maximum reservation charge during any Month, the Customer's MDTQ for purposes of both (i) and (ii) above shall be reduced in the same proportion as the reservation charge paid bears to the maximum reservation charge.

**FORM OF SERVICE AGREEMENT  
(APPLICABLE TO RATE SCHEDULE AFT-CL)**

Date: \_\_\_\_\_,

Contract No. \_\_\_\_\_

**SERVICE AGREEMENT**

This AGREEMENT is entered into by and between Algonquin Gas Transmission, LLC, ("Algonquin") and \_\_\_\_\_ ("Customer").

WHEREAS, [this and an additional clause(s) may be included to describe the historical or factual context of the Agreement, to describe or identify a precedent agreement, and any other agreements if applicable, between Algonquin and Customer related to the Agreement, and/or to describe or define the facilities necessary to provide service under the Agreement, and will not include binding consideration.]

***[In the event that the capacity was awarded as Interim Capacity pursuant to Section 2.6 of the General Terms and Conditions of the Algonquin Tariff, the following language will be included as a Whereas clause in Customer's Agreement: "The service provided to Customer under this Agreement will utilize capacity that was acquired by Customer as Interim Capacity pursuant to the provisions of Section 2.6 of the General Terms and Conditions of the Algonquin Tariff."]***

NOW THEREFORE, in consideration of the premises and of the mutual covenants herein contained, the parties do agree as follows:

1. Algonquin shall deliver and Customer shall take and pay for service on Algonquin's [Canal Lateral, Middletown Lateral, Cleary Lateral, Lake Road Lateral, Brayton Point Lateral, Bellingham Lateral, Phelps Dodge Lateral, Manchester Street Lateral, Cape Cod Lateral, Northeast Gateway Lateral, J-2 Facility, ~~or~~ Kleen Energy Lateral, or West Roxbury Lateral, as applicable,] pursuant to the terms of this Agreement and subject to Algonquin's Rate Schedule AFT-CL and the General Terms and Conditions of Algonquin's Tariff, which are incorporated herein by reference and made a part hereof.

***[In the event that a precedent agreement for a new or an expansion project contains credit provisions applicable to Customer's capacity related to such project, the following language shall be included in Customer's Service Agreement. "The credit requirements applicable to this Agreement are set forth in that certain Precedent Agreement dated \_\_\_\_\_ between Algonquin and Customer related to this Agreement."]***

2. The Maximum Daily Transportation Quantity (MDTQ) and Maximum Annual Transportation Quantity (MATQ) for service under this Agreement and any right to increase or decrease the MDTQ or MATQ during the term of this Agreement are listed on Exhibit C attached hereto. The Point(s) of Receipt and Point(s) of Delivery, respectively, are listed on Exhibits A and B attached hereto. Exhibit(s) A, B, and C are incorporated herein by reference and made a part hereof.
3. This Agreement shall be effective on \_\_\_\_\_ [this blank may include a date certain, a date either earlier or later than a specified date certain based on the completion of construction of facilities necessary to provide service under the Agreement, a date set forth in or established by a relevant order from the Federal Energy Regulatory Commission or a commencement date as defined in a precedent agreement between Customer and Algonquin] and shall continue for a term ending on and including \_\_\_\_\_ [or, when applicable, "shall continue for a term of \_\_\_\_\_ years"] ("Primary Term") and shall continue to be effective from \_\_\_\_\_ to \_\_\_\_\_ thereafter ***[In the event that the capacity was awarded as Interim Capacity pursuant to Section 2.6 of the General Terms and Conditions of the Algonquin Tariff, the following phrase will be included in Customer's Agreement: "but in no event beyond \_\_\_\_\_,"]*** unless and until terminated by Algonquin or Customer upon prior written notice of at

least \_\_\_\_\_ [not less than 1 year for agreements with a primary term of more than 1 year; for service agreements with both a primary term and notice period of exactly one (1) year, the notice must be submitted within ten (10) Business Days of the beginning of the primary term of the service agreement, and at least one (1) year for subsequent notices for such service agreement; and otherwise mutually agreeable]. [In the event that Algonquin and Customer agree to a fixed term, the evergreen and notice of termination language shall be omitted from Customer's Agreement.] This Agreement may be terminated at any time by Algonquin in the event Customer fails to pay part or all of the amount of any bill for service hereunder and such failure continues for thirty days after payment is due; provided Algonquin gives ten days prior written notice to Customer of such termination and provided further such termination shall not be effective if, prior to the date of termination, Customer either pays such outstanding bill or furnishes a good and sufficient surety bond or other form of security reasonably acceptable to Algonquin guaranteeing payment to Algonquin of such outstanding bill; provided that Algonquin shall not be entitled to terminate service pending the resolution of a disputed bill if Customer complies with the billing dispute procedure currently on file in Algonquin's Tariff. Any portions of this Agreement necessary to correct or cash-out imbalances under this Agreement as required by the General Terms and Conditions of Algonquin's Tariff shall survive the other parts of this Agreement until such time as such balancing has been accomplished.

If this Agreement qualifies as a "ROFR Agreement" as defined in the General Terms and Conditions of Algonquin's Tariff, the provision of a termination notice by either Customer or Algonquin, pursuant to the preceding paragraph, a notice of partial reduction in Maximum Daily Transportation Quantity and Maximum Annual Transportation Quantity pursuant to Exhibit C or the expiration of this Agreement of its own terms triggers Customer's right of first refusal under Section 9 of the General Terms and Conditions of Algonquin's Tariff.

***[In the event that the capacity was awarded as Interim Capacity pursuant to Section 2.6 of the General Terms and Conditions of the Algonquin Tariff, the previous paragraph will be replaced with the following language: "This Agreement does not qualify as a ROFR Agreement, as such term is defined in Section 1 of the General Terms and Conditions of the Algonquin Tariff."]***

4. Maximum rates, charges, and fees shall be applicable to service pursuant to this Agreement except during the specified term of a discounted rate or a Negotiated Rate to which Customer and Algonquin have agreed. Provisions governing such discounted rate shall be as specified in the Discount Confirmation to this Agreement. Provisions governing such Negotiated Rate and term shall be as specified on an appropriate Statement of Negotiated Rates filed, with the consent of Customer, as part of Algonquin's Tariff. It is further agreed that Algonquin may seek authorization from the Commission and/or other appropriate body at any time and from time to time to change any rates, charges or other provisions in the applicable Rate Schedule and General Terms and Conditions of Algonquin's Tariff, and Algonquin shall have the right to place such changes in effect in accordance with the Natural Gas Act. Nothing contained herein shall be construed to deny Customer any rights it may have under the Natural Gas Act, including the right to participate fully in rate or other proceedings by intervention or otherwise to contest increased rates in whole or in part.
5. Unless otherwise required in the Tariff, all notices shall be in writing and shall be considered duly delivered when mailed to the applicable address below or transmitted via facsimile. Customer or Algonquin may change the addresses or other information below by written notice to the other without the necessity of amending this Agreement:

Algonquin:

Customer:

6. The interpretation and performance of this Agreement shall be in accordance with the laws of the Commonwealth of Massachusetts, excluding conflicts of law principles that would require the application of the laws of a different jurisdiction.
7. This Agreement supersedes and cancels, as of the effective date of this Agreement, the contract(s) between the parties hereto as described below, if applicable:

[None or an appropriate description]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be signed by their respective Officers and/or Representatives thereunto duly authorized to be effective as of the date stated above.

CUSTOMER: \_\_\_\_\_

ALGONQUIN GAS TRANSMISSION, LLC

By: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_



**FORM OF SERVICE AGREEMENT  
(APPLICABLE TO RATE SCHEDULE AIT-2)**

Date: \_\_\_\_\_,

Contract No. \_\_\_\_\_

**SERVICE AGREEMENT**

This AGREEMENT is entered into by and between Algonquin Gas Transmission, LLC, ("Algonquin") and \_\_\_\_\_ ("Customer").

WHEREAS, [this and an additional clause(s) may be included to describe the historical or factual context of the Agreement, to describe or identify a precedent agreement, and any other agreements if applicable, between Algonquin and Customer related to the Agreement, and/or to describe or define the facilities necessary to provide service under the Agreement, and will not include binding consideration.]

NOW THEREFORE, in consideration of the premises and of the mutual covenants herein contained, the parties do agree as follows:

1. Algonquin shall deliver and Customer shall take and pay for service pursuant to the terms of this Agreement and subject to Algonquin's Rate Schedule AIT-2 and the General Terms and Conditions of Algonquin's Tariff, which are incorporated herein by reference and made a part hereof.

***[In the event that a precedent agreement for a new or an expansion project contains credit provisions applicable to Customer's capacity related to such project, the following language shall be included in Customer's Service Agreement. "The credit requirements applicable to this Agreement are set forth in that certain Precedent Agreement dated \_\_\_\_\_ between Algonquin and Customer related to this Agreement."]***

2. Maximum Daily Transportation Quantity \_\_\_\_\_ Dth  
Maximum Annual Transportation Quantity \_\_\_\_\_ Dth
3. Service hereunder will be provided solely by the utilization of capacity on the lateral facility indicated below as such lateral facility is defined in Rate Schedule AFT-CL:

(Check Only One)

Brayton Point Lateral	_____
Manchester Street Lateral	_____
Canal Lateral	_____
Cape Cod Lateral	_____
Northeast Gateway Lateral	_____
J-2 Facility	_____
Kleen Energy Lateral	_____
<u>West Roxbury Lateral</u>	_____

4. This Agreement shall be effective on \_\_\_\_\_ [this blank may include a date certain, a date either earlier or later than a specified date certain based on the completion of construction of facilities necessary to provide service under the Agreement, a date set forth in or established by a relevant order from the Federal Energy Regulatory Commission or a commencement date as defined in a precedent agreement between Customer and Algonquin] and shall continue for a term ending on and including \_\_\_\_\_ [or, when applicable, "shall continue for a term of \_\_\_\_\_ years"] ("Primary Term") and shall continue to be effective from \_\_\_\_\_ to \_\_\_\_\_ thereafter unless and until terminated by Algonquin or Customer upon prior written notice of at least \_\_\_\_\_. This Agreement may be terminated at any time by Algonquin in the event Customer fails to pay part or all of the amount of any bill for service hereunder and such failure continues for thirty days after payment is due; provided Algonquin gives ten days prior



# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit T**

Related Applications

**Algonquin Incremental Market Project  
Related Applications (18 CFR §157.18)**

In this application, Algonquin is proposing to abandon (i) 3.3 miles of 26-inch mainline pipeline in Rockland County, New York, (ii) 9.4 miles of 26-inch mainline pipeline in Rockland and Westchester counties, New York, (iii) 4.5 miles of 26-inch mainline pipeline in Putnam County, New York, and Fairfield County, Connecticut, (iv) 9.1 miles of 6-inch E-1 System Lateral in New London County, Connecticut, and (v) Willimantic M&R Station in Windham County, Connecticut and Glastonbury M&R Station in Hartford, Connecticut which will be reconstructed. These facilities were constructed pursuant to authorization issued in Docket No. G-1319.<sup>1</sup> Algonquin is also proposing to abandon (i) Guilford M&R Station in New Haven, Connecticut which will be reconstructed, and (ii) Greenville M&R Station in New London County, Connecticut. These facilities were constructed pursuant to authorization issued in Docket Nos. CP67-180 and CP-68-311, respectively.<sup>2</sup>

The Glastonbury and Guilford M&R Stations will be rebuilt within the same station footprints. The Willimantic M&R Station will be rebuilt on a new 0.51-acre parcel of land to be acquired by Algonquin. This parcel abuts the existing station property on the south along South Street in the Town of Windham, Windham County, Connecticut.

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<sup>1</sup> *Algonquin Gas Transmission Company, et al.*, 12 FPC 209 (1953).

<sup>2</sup> *Algonquin Gas Transmission Company*, 38 FPC 244 (1967); *Algonquin Gas Transmission Company*, 39 FPC 1021 (1968).

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit Y**

Accounting Treatment of Abandonment

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-\_\_-000**  
**Exhibit Y**

**Algonquin Incremental Market Project**  
**Accounting Treatment of Abandonment (18 C.F.R. § 157.18)**

*Accounting entries for the proposed abandonment of approximately 12.8 miles of 26" pipe in NY, 4.4 miles of 26" pipe in CT, 9.1 miles of 6" pipe in CT, and 4 meter stations in CT*

ENTRY	DEBIT	CREDIT	ACCOUNT DESCRIPTION	DEBIT	CREDIT
1	1088		Retirement Work In Progress	10,084,037	
		1010	Gas Plant In Service		(10,084,037)
To record the retirement from Gas Plant in Service.					
2	1088		Retirement Work In Progress	10,212,820	
		1310	Cash		(10,212,820)
To record Cost of Removal related to abandonment					
3	1080		Accumulated Provision for Depreciation	20,296,857	
		1088	Retirement Work In Progress		(20,296,857)
To record clearance of Retirement Work in Progress to Accumulated Depreciation					

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit Z-1**

Open Season Notices

## Algonquin Incremental Market (AIM) Project

Connecting emerging natural gas supplies to premium markets in the Northeast and New England



**Open Season Notice for Firm Service**  
December 13, 2010 – February 11, 2011

J.A. - 0322



## Algonquin Incremental Market (AIM) Project

AIM offers the unique opportunity for moving emerging natural gas supplies to premium markets in the Northeast and New England.

Spectra Energy's Algonquin Gas Transmission, LLC ("Algonquin"), a leading provider of natural gas transportation to the Northeast and New England, is proposing a system expansion to deliver natural gas from both existing supply sources and the emerging Marcellus shale gas to premium Northeast and New England markets. This Open Season is seeking market interest in receipt and delivery alternatives resulting from the need to connect growing gas supplies in the Appalachian basin to the expanding Northeast and New England markets.

### Project Background

The Northeast and New England gas supply dynamics are shifting, with a decline in traditional Canadian imports and a dramatic increase in Appalachian gas, including the Marcellus shale play. Connecting growing markets to new supply has been beneficial to Algonquin's shippers for many years.

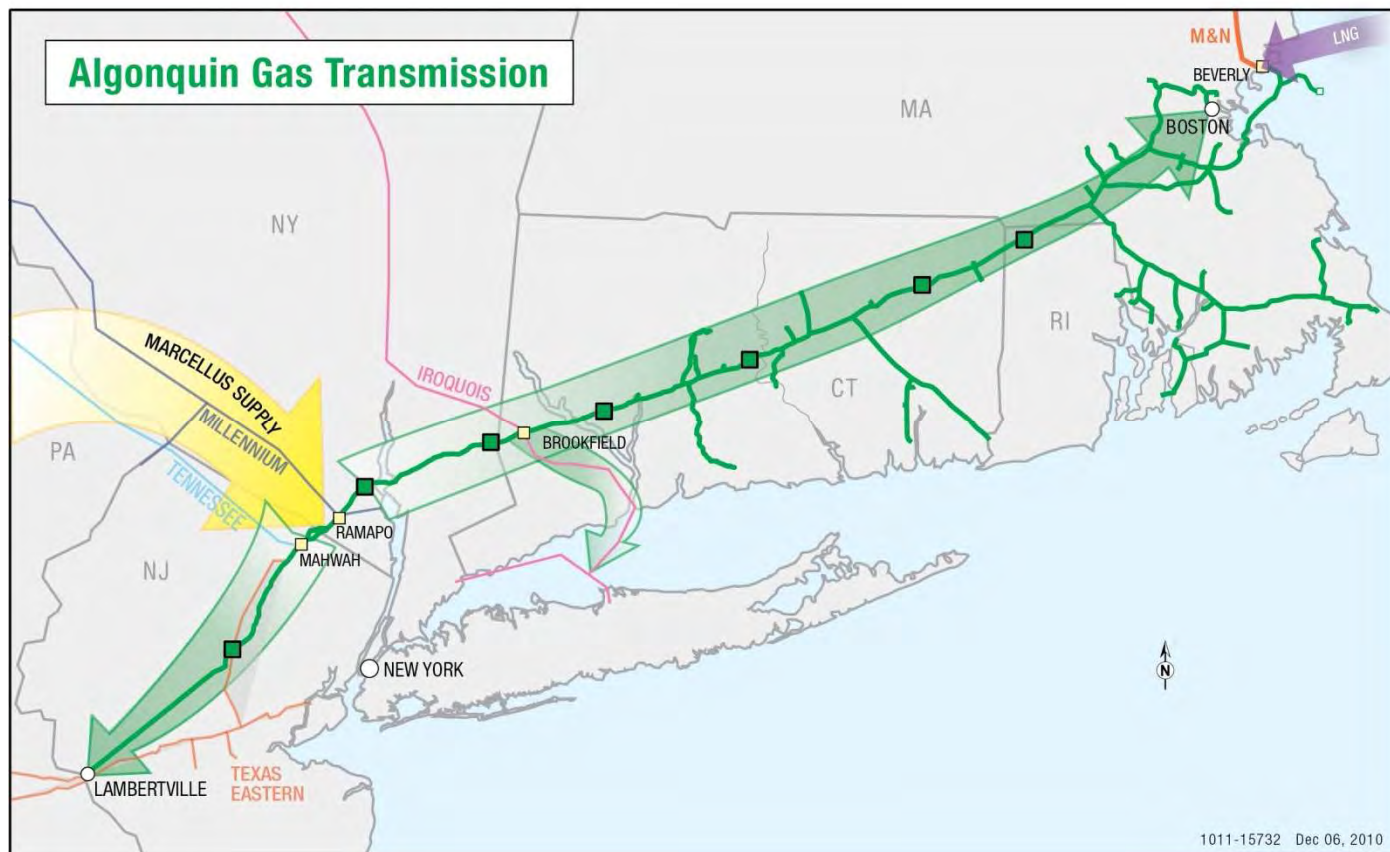
This expansion will offer growing Northeast and New England markets increased supply diversity, enhanced ability to better manage price volatility, improved supply security and reliability. The Algonquin system offers attractive market options for these developing supply sources, including access to conventional Northeast and New England distribution utility market growth, increasing natural gas power generation, and

interconnects with downstream pipelines that provide direct access to additional markets.

Algonquin has the proven ability and experience to develop and execute AIM as evidenced by the numerous projects Algonquin has put into service. Through the utilization of its existing mainline infrastructure, plus incremental expansion as necessary, Algonquin will facilitate the cost-effective transportation of these new supplies to the Northeast and New England markets. In addition, Algonquin will maximize the use of existing rights-of-way in order to minimize the impact on landowners and the environment as well as to keep the construction costs as low as possible.

### Project Description

AIM provides shippers with the opportunity to design transportation services from multiple receipt points on the Algonquin system including, but not limited to, Lambertville, Ramapo, Mahwah and Beverly to multiple existing and proposed delivery points including Lambertville, Brookfield and numerous other market points. Shippers may also request to increase the capacity at the Algonquin interconnect at Brookfield, providing incremental gas deliveries into the Iroquois Gas Transmission system via a compression-only service which Algonquin would propose to offer,



subject to any necessary approvals to provide such service.

Algonquin may develop smaller, targeted projects from the nominations received that may be more representative of the timing and markets served. Algonquin anticipates that AIM will have a target in-service date of November 2014.

### Project Rates

Rates will be determined at the conclusion of the Open Season and are dependent upon the scope and final facilities required to satisfy the firm service requests for shippers who are awarded capacity and who have executed binding precedent agreements. Shippers will have the ability to choose to pay Algonquin's applicable recourse rates for service on the AIM facilities or to pay a mutually agreeable negotiated rate for such service plus any applicable fuel and applicable charges and surcharges. Algonquin may consider favorable rate or rate-related incentives to anchor shippers who are willing to both commit early and provide the commercial foundation for the AIM project.

### Nomination Process

During the Open Season period (9:00 a.m., EST, Monday, December 13, 2010, to 5:00 p.m., EST, on Friday, February 11, 2011), interested parties must submit a Service Request Form, which specifies the Maximum Daily Transportation Quantity (MDTQ), contract term (15-year minimum required), and desired primary receipt and delivery points. The Service Request Form is included in this package. The completed Service Request Form must be executed by a duly authorized representative and mailed, faxed, or emailed to [gncrisp@spectraenergy.com](mailto:gncrisp@spectraenergy.com) in pdf format to Algonquin's offices at: 5400 Westheimer Court, Houston, TX 77056  
Attention: Greg Crisp, Project Director  
The fax number is (713) 627-4727.  
Algonquin reserves the right to reject any Service Request Form that is not received on or before 5:00 p.m. EST, on February 11, 2011.

### Contracting for Service

Upon the close of the Open Season, a representative will contact you to discuss your service requirements. Requesting parties will then have the option to proceed with negotiations on a definitive agreement. All definitive transactions will be subject to the receipt of

all necessary governmental approvals and permits in order to render the proposed services and to construct the proposed facilities.

### Limitations and Reservations

Algonquin reserves the right, in its sole discretion, to decline to proceed with the AIM project. Algonquin also reserves the right to proceed with one or more projects that will be defined through the contracting process and reserves the right to negotiate with only those parties that submit bids with this AIM open season.

Algonquin also reserves the right to reject any and all bids that do not satisfy the requirements set forth in this Non-binding Open Season Notice. Without limiting the foregoing, Algonquin may, but is not required to, reject any request for service in which the Non-binding Service Request Form is incomplete, is inconsistent with the terms and conditions outlined in this Non-binding Open Season Notice, contains additional or modified terms, or is otherwise deficient in any respect. Algonquin also reserves the right to reject requests for service in the event requesting parties are unable to meet applicable creditworthiness requirements. No request for service shall be binding on Algonquin unless and until duly authorized representatives of both a requesting party and Algonquin have executed a binding precedent agreement.

### Communications

At any time during the Open Season, interested parties are encouraged to contact their Algonquin account manager or Greg Crisp at (713) 627-4611 to discuss any questions or to seek additional information.

Spectra Energy Corp (NYSE: SE), a *FORTUNE 500* company, is one of North America's premier natural gas infrastructure companies serving three key links in the natural gas value chain: gathering and processing, transmission and storage, and distribution. For nearly a century, Spectra Energy and its predecessor companies have developed critically important pipelines and related infrastructure connecting natural gas supply sources to premium markets. Based in Houston, Texas, the company operates in the United States and Canada approximately 19,100 miles of transmission pipeline, more than 305 billion cubic feet of storage, as well as natural gas gathering and processing, natural gas liquids operations and local distribution assets. The company also has a 50 percent ownership in DCP Midstream, one of the largest natural gas gatherers and processors in the United States. Spectra Energy is a member of both the Dow Jones Sustainability World Index and the U.S. S&P 500 Carbon Disclosure Project's Leadership Index. For more information, visit [www.spectraenergy.com](http://www.spectraenergy.com).



**Algonquin Incremental Market (AIM) Project**  
**Open Season for Firm Transportation Capacity**  
*Service Request Form*  
*Algonquin Gas Transmission, LLC*

**Shipper Information**

Company \_\_\_\_\_  
Contact \_\_\_\_\_  
Title \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_  
E-mail \_\_\_\_\_

Receipt Point(s) <sup>[1][3]</sup>	Quantity (Dth/d)	Delivery Point(s) <sup>[2][3]</sup>	Quantity (Dth/d)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Maximum Daily Transportation Quantity** \_\_\_\_\_

Contract Term: \_\_\_\_\_ (15-yr.minimum)

Signature of Requester/Customer and Date: \_\_\_\_\_

By completing this Service Request Form, subject to Algonquin's acceptance of shipper's request for service and shipper's receipt of notification from Algonquin of quantities of capacity allocated to shipper, shipper hereby agrees to enter into negotiations with the objective to enter into a binding precedent agreement with Algonquin. If shipper does not enter into a binding precedent agreement, Algonquin reserves the right to reject shipper's request for service as set forth in this Service Request Form.

If you have any questions, please contact your Algonquin account manager or the contact listed below. In addition, please send your completed Open Season Service Request Form to:

Greg Crisp, Project Director (713) 627-4727 fax  
Algonquin Gas Transmission, LLC [gncrisp@spectraenergy.com](mailto:gncrisp@spectraenergy.com)  
5400 Westheimer Court  
Houston, TX 77056

<sup>[1]</sup> The sum of multiple nominated receipt point quantities may not exceed the Maximum Daily Transportation Quantity.

<sup>[2]</sup> The sum of multiple nominated delivery point quantities may not exceed the Maximum Daily Transportation Quantity.

<sup>[3]</sup> For a compression service at Brookfield from Algonquin into Iroquois Gas Transmission specify Brookfield as both the receipt and delivery point

## Algonquin Incremental Market (AIM) Project

*Securing New England's energy future by providing access to domestic, clean, and abundant supplies of natural gas*



### Open Season Notice for Firm Service

September 20, 2012 – November 2, 2012



## Algonquin Incremental Market (AIM) Project

*Securing New England's energy future by providing access to domestic, clean, and abundant supplies of natural gas*

Spectra Energy's Algonquin Gas Transmission, LLC ("Algonquin"), a leading provider of natural gas transportation to the Northeast and New England, is proposing an expansion of its existing system to meet growing New England demand with abundant natural gas supplies from regional supply sources. In this Open Season, Algonquin invites parties interested in obtaining AIM capacity to submit a firm service request form. Algonquin has recently executed an agreement with a shipper in support of the development of the AIM Project that qualifies the shipper for Anchor Shipper status. The service commencement date for this project is targeted for November 1, 2016.

### Project Background

Natural gas demand in New England is growing rapidly as natural gas is becoming the fuel of choice for home heating and electric power generation. Converting home heating units from oil to natural gas represents a substantial source of growth in the region, as less than 50% of homes currently use natural gas for home heating. Likewise, ISO New England reports that electric energy production from natural gas has grown from 15% in 2000 to 52% in 2011, almost completely displacing oil and substantially replacing coal. New England will need additional natural gas pipeline infrastructure to reliably meet increased demands from home heating and electric generation. While demand is increasing, regional production is also becoming increasingly available to the Algonquin system and more production is expected to enter Algonquin in the coming years. These additional supplies are a natural fit for meeting the natural gas demand needs of the region. The AIM Project is an infrastructure investment that would increase pipeline capacity and allow abundant supplies from regional production to flow to the New England LDC and power generation markets. A study conducted by Concentric Energy Advisors concluded that New England natural gas and electric customers could realize from \$240 to \$310 million annually in direct savings as a result of additional natural gas infrastructure.

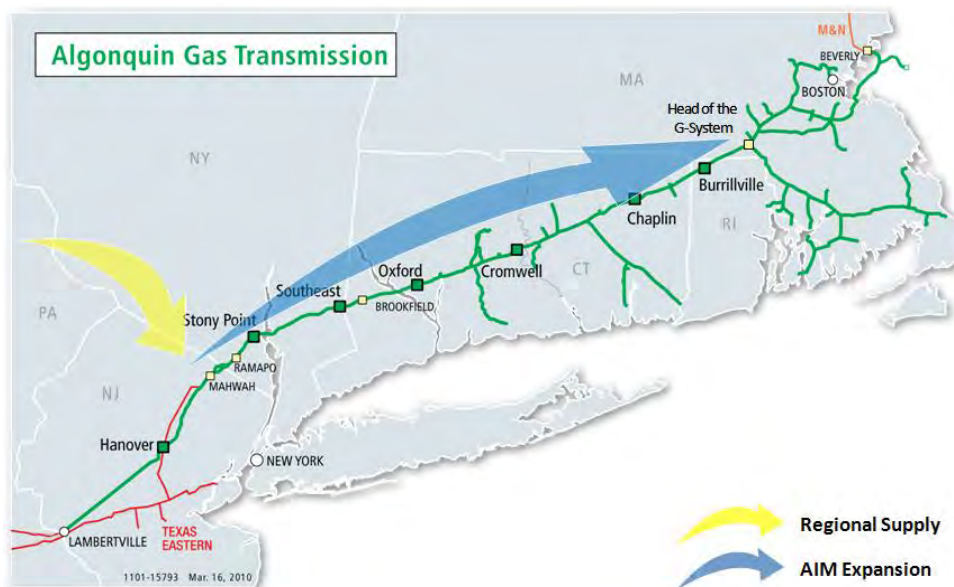
Algonquin has the proven ability and experience to execute the AIM Project. Further, with most of the construction expected to occur within existing rights-of-way and company-owned facilities, Algonquin will develop the project while minimizing impacts to landowners, local communities and the environment. The AIM Project will provide New England with a unique opportunity to secure a cost effective, domestically produced, environmentally friendly source of energy to support its current demand for clean burning natural gas and future growth.

### Project Service

AIM will provide shippers with an opportunity to obtain firm transportation service from a receipt point at Ramapo to multiple existing and proposed mainline delivery points up to and including the head of the G-system. Algonquin contemplates a project expansion capacity of 450,000 Dth/d. Algonquin is willing to consider alternate receipt points as far upstream as Mahwah, as well as alternate delivery points, and an increased or reduced level of expansion capacity depending on project economics. A bidder in the Open Season can qualify as an "Anchor Shipper" for the project by submitting a bid of 100,000 Dth/d or more for a term of 15 years or more. Algonquin is willing to offer Anchor Shippers appropriate rate and rate-related incentives, including but not limited to lower rates than non-anchor shippers, and certain most favored nations rights. Algonquin is also willing to consider providing Anchor Shippers certain other incentives, such as a limited term reduction right and priority rights to obtain unsubscribed project capacity or to relinquish capacity if the project is oversubscribed prior to the service commencement date for AIM. In addition, Algonquin may consider offering other service enhancements or flexibility based on requests made by interested shippers on the Service Request Form. Algonquin anticipates that the AIM expansion project will have a target in-service date of November 2016, but Algonquin is also willing to consider offering service earlier than 2016, depending on project economics and timing of regulatory approvals.

### Project Rates

Rates will be determined at the conclusion of the Open Season and are dependent upon the scope and final facilities required to satisfy the firm service requests for shippers who are awarded capacity and who have executed binding precedent agreements. Shippers will have the option of paying Algonquin's applicable recourse rates for service on the AIM facilities or a negotiated rate for such service, plus any applicable fuel and applicable charges and surcharges.



### **Nomination Process**

During the Open Season period (9:00 a.m., EST, Thursday, September 20, 2012, to 5:00 p.m., EST, on Friday, November 2, 2012) interested parties must submit a Service Request Form, which specifies the Maximum Daily Transportation Quantity (MDTQ), contract term (15-year minimum required), and desired primary receipt and delivery points. The Service Request Form is included in this package. The completed Service Request Form must be executed by a duly authorized representative and mailed, faxed, or emailed in pdf format to Algonquin's offices at:

5400 Westheimer Court, Houston, TX 77056  
Attn: Greg Crisp, Director, Business Development  
gncrisp@spectraenergy.com  
Fax No. (713) 627-4727

Algonquin reserves the right to reject any Service Request Form that is not received on or before 5:00 p.m. EST, on November 2, 2012.

### **Contracting for Service**

After the Open Season concludes, Algonquin representatives will contact all parties who have submitted valid requests and been awarded capacity for the project in order to finalize the terms on which service will be provided. Any party who is awarded AIM capacity must enter into a binding Precedent Agreement. Algonquin reserves the right to reject any party's valid request for service in the event a duly authorized representative of such party has not executed a binding Precedent Agreement on or before 30 days following the end of the Open Season.

### **Capacity Allocation Process**

In the event Algonquin receives valid requests for service that exceed the quantity of pipeline, point or segment capacity that Algonquin is willing to propose for the AIM Project, and Algonquin determines not to expand the applicable pipeline, point or segment capacity, then Algonquin will allocate such capacity on a not unduly discriminatory basis first to qualifying Anchor Shippers executing binding Precedent Agreements and next to other shippers that have executed binding Precedent Agreements. With respect to Anchor Shippers, Algonquin will pro rate such capacity on a not unduly discriminatory basis taking into account the quantities subscribed under each such binding Precedent Agreement, the quantities associated with the primary points and primary firm paths under each such agreement, and other factors on a not unduly discriminatory basis but deeming the economic value of each such agreement to Algonquin to be equal. If, after allocating capacity to Anchor Shippers, Algonquin is able to accommodate some but not all of the pipeline, point or segment capacity nominated by other (non-anchor) shippers, Algonquin will allocate such capacity on a net present value basis among such other shippers based on rate, contract term and MDTQ nominated, with Algonquin having the discretion to grant capacity to any bid or combination of bids that provides the highest net present value. Multiple affiliates of a single entity that collectively submit bids in the

aggregate totaling at least 100,000 Dth/d will, upon request, all be considered Anchor Shippers. A shipper's status as an Anchor Shipper, and the Anchor Shipper's attendant rights, will continue to apply even if the shipper's aggregate capacity (including the capacity of its affiliates) falls below the minimum quantity required to qualify as an Anchor Shipper due to any pro rata allocation resulting from the Open Season.

### **Limitations and Reservations**

Algonquin reserves the right, in its sole discretion, to decline to proceed with the AIM Project. Algonquin also reserves the right to proceed with one or more projects that will be defined through the contracting process and to develop alternative projects from the requests received during this Open Season that may be more representative of the timing requested and markets served. Algonquin reserves the right to negotiate with only those parties that submit valid bids as part of this AIM Open Season. Algonquin also reserves the right to reject any and all bids that do not satisfy the requirements set forth in this Open Season Notice. Without limiting the foregoing, Algonquin may, but is not required to, reject any request for service in which the Service Request Form is incomplete, is inconsistent with the terms and conditions outlined in this Open Season Notice, contains additional or modified terms, or is otherwise deficient in any respect. Algonquin also reserves the right to reject requests for service in the event requesting parties are unable to meet applicable creditworthiness requirements. No request for service shall be binding on Algonquin unless and until duly authorized representatives of both a requesting party and Algonquin have executed a binding Precedent Agreement.

### **Reverse Open Season**

A reverse open season will also be held after this Open Season whereby existing shippers will be afforded an opportunity to turn back existing capacity in accordance with the terms set forth in the reverse open season notice.

### **Communications**

At any time during the Open Season, interested parties are encouraged to contact their Algonquin account manager or Greg Crisp at (713) 627-4611 to discuss any questions or to seek additional information.

Spectra Energy Corp (NYSE: SE), a FORTUNE 500 company, is one of North America's premier natural gas infrastructure companies serving three key links in the natural gas value chain: gathering and processing, transmission and storage, and distribution. For nearly a century, Spectra Energy and its predecessor companies have developed critically important pipelines and related infrastructure connecting natural gas supply sources to premium markets. Based in Houston, Texas, the company operates in the United States and Canada approximately 19,300 miles of transmission pipeline, more than 300 billion cubic feet of storage, as well as natural gas gathering and processing, natural gas liquids operations and local distribution assets. The company also has a 50 percent ownership in DCP Midstream, one of the largest natural gas gatherers and processors in the United States. Spectra Energy is a member of both the Dow Jones Sustainability World Index and the U.S. S&P 500 Carbon Disclosure Project's Leadership Index. For more information, visit [www.spectraenergy.com](http://www.spectraenergy.com).

## AIM Project Service Request Form

### Shipper Information

Company \_\_\_\_\_  
Contact \_\_\_\_\_  
Title \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_  
Email \_\_\_\_\_

### Contract Requirements

Maximum Daily Transportation Quantity (dekatherms): \_\_\_\_\_

Receipt Point(s) <sup>[1]</sup>	Delivery Point(s) <sup>[2]</sup>	Quantity (Dth/d)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Service Commencement Date: \_\_\_\_\_

Contract Term: (15-year minimum required) \_\_\_\_\_

Other: \_\_\_\_\_

*[Please specify other service enhancements or flexibility, such as firm, non-ratable, hourly swing service, that may be of interest. This information will not affect the validity of the service request. The incorporation of any such service enhancement or flexibility into this Project will be at Algonquin's sole discretion and, further, will be dependent upon project economics, timing, and requests for service received during this Open Season.]*

Signature of Requester/Customer: \_\_\_\_\_ Date: \_\_\_\_\_

Please mail, fax or email a pdf of the completed service request form to:

Greg Crisp, Director, Business Development  
Algonquin Gas Transmission, LLC  
5400 Westheimer Court  
Houston, TX 77056

713-627- 4727 fax  
[gncrisp@spectraenergy.com](mailto:gncrisp@spectraenergy.com)

<sup>[1]</sup> The sum of multiple Maximum Daily Receipt Obligation quantities may not exceed the Maximum Daily Transportation Quantity.

<sup>[2]</sup> The sum of multiple Maximum Daily Delivery Obligation quantities may not exceed the Maximum Daily Transportation Quantity.

ALGONQUIN INCREMENTAL MARKET (AIM) PROJECT  
SUPPLEMENTAL OPEN SEASON AND  
REVERSE OPEN SEASON NOTICE

**Supplemental Open Season**

Algonquin Gas Transmission, LLC (“Algonquin”), a leading provider of natural gas transportation service to the Northeast and New England, is conducting a supplemental open season (“Supplemental Open Season”) in relation to its Algonquin Incremental Market (“AIM”) Project. The AIM Project will provide shippers with an opportunity to obtain firm transportation service from a receipt point at Ramapo, New York, to multiple existing and proposed mainline delivery points up to and including the head of the G-system. Algonquin conducted an Open Season from September 20, 2012, through November 2, 2012 (“Original Open Season”), in which it received bids and executed precedent agreements for a portion of the 450,000 Dth/d of capacity contemplated in the Original Open Season. Algonquin has received sufficient commitments and interest to proceed with the AIM Project.

To provide interested parties the ability to obtain the remaining, uncommitted AIM Project capacity, Algonquin is holding a Supplemental Open Season in which it will accept binding bids for capacity that is not currently subject to executed precedent agreements. In this Supplemental Open Season, Algonquin is willing to consider an increased level of expansion capacity, depending on project economics, as well as requests for alternative delivery points. A bidder in the Supplemental Open Season can qualify as an “Anchor Shipper” for the project by submitting a bid of 100,000 Dth/d or more for a term of 15 years or more. Also, multiple affiliates of a single entity that collectively submit bids in the aggregate totaling at least 100,000 Dth/d will, upon request, all be considered Anchor Shippers. Shippers currently in negotiations related to a bid or bids in the Original Open Season that have not yet executed a binding Precedent Agreement with Algonquin will be deemed to have submitted a bid or bids with the same terms in this Supplemental Open Season. Any capacity that is subject to an executed, binding precedent agreement for this Project pursuant to the Original Open Season will not be included in the Supplemental Open Season.

Nomination Process

During the Supplemental Open Season period (9:00 a.m., EST, on Tuesday, June 11, 2013, to 5:00 p.m., EST, on Tuesday, June 25, 2013) parties interested in obtaining uncommitted AIM Project capacity must submit a Service Request Form, which specifies the Maximum Daily Transportation Quantity (MDTQ), contract term (15-year minimum required), and desired primary delivery points. The Service Request Form is included in this package. The completed Service Request Form must be executed by a duly authorized representative and mailed, faxed, or emailed in pdf format to Algonquin’s offices at:

5400 Westheimer Court, Houston, TX 77056  
Attn: Greg Crisp, Director, Business Development  
gncrisp@spectraenergy.com  
Fax No. (713) 627-4727

Algonquin reserves the right to reject any Service Request Form that is not received on or before end of the Supplemental Open Season period.

### Contracting for Service

After the Supplemental Open Season concludes, Algonquin representatives will contact all parties who have submitted valid requests and been awarded capacity for the Project in order to finalize the terms on which service will be provided. [Pursuant to Algonquin's request, the Federal Energy Regulatory Commission ("FERC") has initiated an environmental review under the National Environmental Policy Act Pre-filing process for the proposed AIM Project.] As part of the Pre-filing process, Algonquin [is working] with FERC, landowners, governmental agencies and other interested stakeholders to finalize the design of the AIM Project facilities. In order not to delay the Pre-filing process, the filing of the certificate application with FERC and the anticipated November 1, 2016, in-service date of the AIM Project, any party awarded capacity in the Supplemental Open Season will be required to execute a binding Precedent Agreement on or before July 31, 2013. Algonquin reserves the right to reject any party's valid request for service in the event a duly authorized representative of such party has not executed a binding Precedent Agreement on or before July 31, 2013.

### Capacity Allocation Process

In the event Algonquin receives valid requests for service that exceed the remaining, uncommitted AIM Project capacity that is the subject of this Supplemental Open Season after taking into account requests received pursuant to the Reverse Open Season held contemporaneously with the Supplemental Open Season, and Algonquin determines not to expand the applicable pipeline, point or segment capacity, then Algonquin will allocate such uncommitted AIM Project capacity on a not unduly discriminatory basis first to qualifying Anchor Shippers executing binding Precedent Agreements and next to other (non-anchor) shippers that have executed binding Precedent Agreements pursuant to this Supplemental Open Season. With respect to Anchor Shippers, Algonquin will pro rate such capacity on a not unduly discriminatory basis taking into account the quantities subscribed under each such binding Precedent Agreement, the quantities associated with the primary points and primary firm paths under each such agreement, and other factors on a not unduly discriminatory basis but deeming the economic value of each such agreement to Algonquin to be equal. If, after allocating capacity to Anchor Shippers, Algonquin is able to accommodate some but not all of the pipeline, point or segment capacity nominated by other (non-anchor) shippers, Algonquin will allocate such capacity on a net present value basis among such other shippers based contract term and MDTQ nominated, with Algonquin having the discretion to grant capacity to any bid or combination of bids that provides the highest net present value. A shipper's status as an Anchor Shipper, and the Anchor Shipper's attendant rights, will continue to apply even if the shipper's aggregate capacity (including the capacity of its affiliates) falls below the minimum quantity required to qualify as an Anchor Shipper due to any pro rata allocation resulting from the Supplemental Open Season.

## **Reverse Open Season**

In relation to its AIM Project and in connection with the Original Open Season and Supplemental Open Season, described above, Algonquin is conducting a reverse open season ("Reverse Open Season") in which Algonquin will consider requests from its current firm shippers who desire to release, subject to the criteria set forth below, all or a portion of their current firm transportation entitlements to reduce the scope of Algonquin's facility requirements for the proposed AIM Project.

### **Release Request Process**

During the Reverse Open Season period (9:00 a.m., EST, on Tuesday, June 11, 2013, to 5:00 p.m., EST, on Tuesday, June 25, 2013), any shippers meeting the criteria set forth below and interested in releasing, on a non-recallable basis, their capacity in connection with the AIM Project must submit a Release Request Form, which specifies the applicable Algonquin contract(s). The Release Request Form is included in this package. The completed Release Request Form must be executed by a duly authorized representative and mailed, faxed, or emailed in pdf format to Algonquin's offices at:

5400 Westheimer Court, Houston, TX 77056  
Attn: Greg Crisp, Director, Business Development  
gncrisp@spectraenergy.com  
Fax No. (713) 627-4727

Algonquin reserves the right to reject any Release Request Form that is not received on or before the end of the Reverse Open Season period. Any Release Request Form received shall be binding on the shipper submitting the notice until Algonquin has completed its analysis of whether the shipper's capacity can be utilized for the limited purposes described herein.

### **Criteria for Release of Capacity**

Shippers interested in releasing capacity in connection with this Project must have contracts for capacity that meet all of the following criteria:

1. Shippers must have firm rights to the capacity they desire to release, on a non-recallable basis, as of the later of November 1, 2016, or the date the AIM Project facilities are placed into service.
2. Shippers' capacity must enable Algonquin to reduce the scope of its proposed AIM Project facilities, as finally scoped and designed, necessary to satisfy Algonquin's obligations pursuant to the Supplemental Open Season and the Original Open Season, while maintaining or improving the economics of the AIM Project.
3. Eligible shippers whose capacity release requests are accepted pursuant to this Reverse Open Season will receive a credit on their monthly invoice for such release in an amount equal to the reservation charges received from the AIM Project shipper(s) utilizing the released capacity during the applicable month, provided the credit will not exceed the amount equal to the eligible shipper's reservation charges associated with such released



capacity for the month. For the term of any such release as described above, eligible shippers will continue to be obligated to Algonquin, and must pay Algonquin, for all reservation charges associated with their capacity, as effective from time to time, subject to the credit described in the preceding sentence.

4. Any and all releases of capacity meeting the criteria set forth herein will be subject to and conditioned on Algonquin's receipt of any and all necessary governmental authorizations with terms and conditions acceptable to Algonquin and Algonquin completing construction of, and placing into service, the AIM Project facilities, subject to any modifications in light of this Supplemental Open Season and Reverse Open Season. No release will become effective until the date on which service commences under the firm agreement(s) for which capacity has been released under this Reverse Open Season.

#### Evaluation of Release Requests

Algonquin will notify all shippers responding to this AIM Project Reverse Open Season as soon as reasonably practicable as to whether their capacity can be utilized for the limited purpose described herein. To the extent there is more capacity meeting the above-stated requirements than is required, all such requests to release capacity will be prorated. For every request to release capacity accepted by Algonquin, the MDTQ set out in that shipper's firm service agreement shall be reduced, as appropriate, in accordance with the request to release capacity and Algonquin's acceptance of such request. The shipper shall lose all rights, including renewal options, on the MDTQ that has been released, but shall continue to receive service on, and be obligated for, all other capacity under the shipper's firm service agreement. Every request to release capacity is binding on the shippers proposing to release capacity in connection with this Reverse Open Season. To the extent Algonquin accepts a shipper's request to release capacity, the shipper must, within thirty (30) days of the date that Algonquin notifies the shipper that a portion or all of its capacity can be utilized for the AIM Project, execute an agreement that will govern the shipper's release of capacity consistent with the provisions set forth in this Reverse Open Season.

### **Limitations and Reservations**

Algonquin reserves the right to proceed with one or more projects that will be defined through the contracting process and to develop alternative projects from the requests received during this Supplemental Open Season and Reverse Open Season that may be more representative of the timing requested and markets served. Algonquin reserves the right to negotiate with only those parties that submit valid bids as part of this Supplemental Open Season or valid requests as part of this Reverse Open Season. Algonquin also reserves the right to reject any and all bids or requests that do not satisfy the requirements set forth in this Supplemental Open Season and Reverse Open Season Notice. Without limiting the foregoing, Algonquin may, but is not required to, reject any request for service or release in which the Service Request Form or Release Request Form is incomplete, is inconsistent with the terms and conditions outlined in this Supplemental Open Season and Reverse Open Season Notice, contains additional or modified terms, or is otherwise deficient in any respect. Algonquin also reserves the right to reject requests for service in the event requesting parties are unable to meet applicable creditworthiness requirements. No request for service or release shall be binding on Algonquin unless and until duly authorized representatives of both a requesting party and Algonquin have executed a binding Precedent Agreement or agreement governing the shipper's release of capacity, respectively.

### **Communications**

At any time during the Supplemental Open Season and Reverse Open Season, interested parties are encouraged to contact their Algonquin account manager or Greg Crisp at (713) 627-4611 to discuss any questions or to seek additional information.

## AIM Project Service Request Form

### Shipper Information

Company \_\_\_\_\_  
Contact \_\_\_\_\_  
Title \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_  
Email \_\_\_\_\_

### Contract Requirements

Maximum Daily Transportation Quantity (dekatherms): \_\_\_\_\_

Receipt Point(s) [1]	Delivery Point(s) [2]	Quantity (Dth/d)
Ramapo		
_____	_____	_____
_____	_____	_____
_____	_____	_____

Service Commencement Date: \_\_\_\_\_

Contract Term: (15-year minimum required) \_\_\_\_\_

Other: \_\_\_\_\_  
\_\_\_\_\_

Signature of Requester/Customer: \_\_\_\_\_ Date: \_\_\_\_\_

Please mail, fax or email a pdf of the completed service request form to:

Greg Crisp, Director, Business Development

Algonquin Gas Transmission, LLC

5400 Westheimer Court

Houston, TX 77056

713-627- 4727 fax

gncrisp@spectraenergy.com

*[1] The sum of multiple Maximum Daily Receipt Obligation quantities may not exceed the Maximum Daily Transportation Quantity.*

*[2] The sum of multiple Maximum Daily Delivery Obligation quantities may not exceed the Maximum Daily Transportation Quantity.*

**AIM Project  
Release Request Form**

**Shipper Information**

Company \_\_\_\_\_

Contact \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

**Contract Number** \_\_\_\_\_

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit Z-2**

Incremental Fuel Derivation

**INCREMENTAL FUEL SHRINKAGE CALCULATION**  
**AIM PROJECT (342,000 Dth/D)**

The incremental fuel for the AIM Project (Project fuel) includes the compression fuel used and lost and unaccounted for gas for gas movement from the Project's receipt point at Ramapo, NY to various delivery points in Connecticut, Rhode Island and Massachusetts. The incremental fuel for the AIM Project is calculated based on fuel required to move the Project volume along this expansion path. This calculation is based on a winter peak day design where gas on the Algonquin system is moved from west to east without inclusion of certain existing east to west contracts.

In order to derive the incremental fuel requirements for the AIM Project, Algonquin first established a base system to determine the base horsepower and fuel. This base system is the recently completed New Jersey-New York Project (Docket CP11-56-000) as approved by the Commission in its Order Issuing Certificate and Approving Abandonment dated May 21, 2012. The base system was then updated for the latest contracts and modified to exclude certain backhaul (east-to-west) services on the Algonquin system to ensure facilities were properly designed for the AIM Project. The expansion system is the base system with added facilities to accommodate the AIM Project volume. The difference in compression requirement at all compressor stations along the expansion path between the Base and Expansion systems is the horsepower requirement for AIM project. Algonquin then used various fuel rates, depending on the type of units, to calculate the total fuel requirement for AIM Project on a winter peak day design. Based on this calculation, Algonquin has determined that a total daily fuel of 14.479 MDth/D is required to accommodate the AIM Project volume from its receipt point to its delivery points. This fuel translates into a winter peak day shrinkage of 4.06%. To derive to an annualized shrinkage, Algonquin used an assumed load factor (shown below) to come up with a weighted average shrinkage for the year. The calculation is as follows:

AIM Daily Fuel Requirement (Peak Day Winter)	= 14.479 MDth/D
AIM Fuel Shrinkage (Peak Day Winter)	= 4.06% (see supporting calculation <sup>(a)</sup> below)
AIM Fuel Shrinkage (Annualized)	= 2.02% (see supporting calculation <sup>(b)</sup> below)

<sup>(a)</sup>  $14.479 / (14.479 + 342.000) = 4.06\%$

<sup>(b)</sup> Load factor used (Jan-Mar @ 100%, Dec&Apr @ 75%, Nov&May @ 50%, Oct&Jun @ 25% and Jul-Sep @ 0%)  
 $(4.06 \times 90 \text{ days} + 4.06 \times 0.75 \times 61 \text{ days} + 4.06 \times 0.50 \times 61 \text{ days} + 4.06 \times 0.25 \times 61 \text{ days} + 4.06 \times 0.0 \times 92 \text{ days}) / 365 \text{ days} = 2.02\%$

AIM Project  
Docket CP14- - 000  
Exhibit Z-2 (Incremental Fuel Calculation)  
Sheet 2 of 2

INCREMENTAL FUEL CALCULATION FOR AIM PROJECT

Station	Detailed Horsepower	Base System			Expansion System			AIM		
		Installed	Reserved	Required	Installed	Reserved	Required	Required HP	Fuel rate	Required fuel
Hanover - 24"	Cent - Taurus 60S	7,700		4,989	7,700		4,075	-914	0.000268	-0.245
Hanover - 30"	Cent - 2 Taurus 60S (7,150 ea)	14,300	3,830	10,470	14,300	3,830	10,470	0		
Stony Point - 24"	Cent - Taurus 60S	7,700		7,700	7,700		7,700	0		
	Recip - 4 Engines (2,700 ea)	10,800	2,700	8,100	0 <sup>(a1)</sup>	0	0	-8,100	0.000252	-2.041
Stony Point - 30"	Cent - Mars 100 (proposed AIM)				15,900	2,700 <sup>(a2)</sup>	10,400	10,400	0.000235	2.444
	Cent - Mars 90S	12,600		12,600	12,600		12,600	0		
	Cent - Taurus 60S	7,700		7,700	7,700		7,700	0		
	Cent - Mars 100 (proposed AIM)				15,900		14,000	14,000	0.000235	3.290
Southeast - 24"	Cent - 2 Centaur 40S (4,700 ea)	9,400		9,400	9,400		9,400	0		
Southeast - 30"	Cent - Taurus 60S	7,700		7,700	7,700		7,700	0		
	Cent - Taurus 70	10,310		10,310	10,310		10,310	0		
	Cent - Mars 90S	12,600		12,600	12,600		12,600	0		
	Cent - Taurus 70 (proposed AIM)				10,320		10,320	10,320	0.000235	2.425
Oxford - 24"	Cent - Mars 100S	15,000		11,500	15,000		15,000	3,500	0.000268	0.938
Oxford - 30"	Cent - Taurus 60S	7,700		7,700	7,700		7,700	0		
	Cent - Mars 100S	15,000		15,000	15,000		15,000	0		
Cromwell - 24"	Recip - 2 Engines (2,000 ea)	4,000		4,000	4,000		4,000	0		
	Recip - 4 Engines (2,000 ea) <sup>(b)</sup>				8,000 <sup>(b)</sup>		7,052	7,052	0.000252	1.777
Cromwell - 30"	Recip - 4 Engines (2,000 ea) <sup>(b)</sup>	8,000		8,000	0 <sup>(b)</sup>		0	-8,000	0.000252	-2.016
	Cent - 2 Centaur 40S (4,700 ea)	9,400		9,400	9,400		9,400	0		
	Cent - Mars 100 (proposed AIM)				15,900		15,900	15,900	0.000235	3.737
Chaplin - 30"	Cent - 2 Taurus 60S (6,950 ea)	13,900		11,400	13,900		13,900	2,500	0.000268	0.670
	Cent - Taurus 60 (proposed AIM)				7,700		3,070	3,070	0.000235	0.721
Burrillville - 24"	Recip - Engines (2,700 ea)	8,100	2,700	4,000	5,400	2,700	2,700	-1,300	0.000252	-0.328
	Cent - Taurus 60S (6,950) <sup>(c)</sup>				6,950 <sup>(c)</sup>		5,012	5,012	0.000268	1.343
Burrillville - 30"	Recip - Engine (2,700) <sup>(d)</sup>				2,700 <sup>(d)</sup>		2,700	2,700	0.000252	0.680
	Cent - Taurus 60S (6,950 ea)	13,900		12,950	6,950		6,950	-6,000	0.000268	-1.608
	Cent - Mars 100 (proposed AIM)				15,900		11,450	11,450	0.000235	2.691

Notes:

(a1) Retire 4 - 2,700 HP recips under a separate system project

(a2) Move the reserved 2,700 HP from retired recip to new Mars 100

(b) Repipe 4 - 2,000 HP recips from the 30" to 24" line

(c) Repipe Taurus 60S from the 30" to 24" line

(d) Repipe one 2,700 HP recip unit from the 24" to 30" line

(e) Jan - Mar at 100% + Dec & Apr at 75% + Nov & May at 50% + Oct & Jun at 25% + Jul - Sep at 0%

Project Fuel (MDth/D) 14.479  
Winter Peak Shrinkage 4.06%  
Annualized Shrinkage<sup>(e)</sup> 2.02%



# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit Z-3**

Form of Protective Agreement

PROTECTIVE AGREEMENT

This Protective Agreement (~~Protective Agreement~~”), is made and entered into as of \_\_\_\_\_, 201\_ (~~Effective Date~~”), by and between Algonquin Gas Transmission, LLC, a Delaware limited liability company (~~Algonquin~~”) and [Counterparty], a [jurisdiction and organization type] (~~Participant~~,” and together with Algonquin, the ~~Parties~~”).

WHEREAS, a certificate application regarding the Algonquin Incremental Market Project (~~Project~~”) is currently pending before the Federal Energy Regulatory Commission (~~Commission~~”) in Docket No. CP14-\_\_\_\_-000 (~~Certificate Proceeding~~”);

WHEREAS, pursuant to Section 388.112(b) of the Commission’s regulations, 18 C.F.R. § 388.112(b) (2013), this Protective Agreement will apply to requests for a copy of the complete, non-public version of any document filed by Algonquin as privileged or as Critical Energy Infrastructure Information (CEII) in the Certificate Proceeding; and

WHEREAS, Participant is submitting this Protective Agreement as part of its request pursuant to 18 C.F.R. § 388.112(b)(iii) for a complete, non-public version of [name of document(s)] included in the Commission’s eLibrary under Accession No[s]. [\_\_\_\_\_] (~~Protected Materials~~”) subject to the terms of this Protective Agreement;

NOW, THEREFORE, Algonquin and Participant agree as follows:

1. This Protective Agreement shall govern the use of all Protected Materials produced by, or on behalf of, Algonquin to Participant hereunder. Notwithstanding any order terminating the Certificate Proceeding, this Protective Agreement shall remain in effect until specifically modified or terminated by (i) written agreement of the Parties, (ii) the Commission or (iii) any applicable Presiding Administrative Law Judge (~~Presiding Judge~~”) (which includes the Chief Administrative Law Judge).

2. This Protective Agreement applies to the Protected Materials, as defined in the recitals to this Protective Agreement. Notwithstanding anything herein to the contrary, Algonquin’s delivery of Protected Materials to Participant pursuant to this Protective Agreement shall not affect the Protected Materials’ protected status under the Commission’s regulations and Freedom of Information Act, 5 U.S.C. 552 (~~FOIA~~”).

3. Definitions -- For purposes of this Protective Agreement:

- (a) The term ~~Notes of Protected Materials~~” means memoranda, handwritten notes, or any other form of information (including electronic form) which copies or discloses materials described in the Protected Materials. Except as specifically provided in this Protective Agreement, Notes of Protected Materials are subject to the same terms and restrictions as the Protected Materials under this Protective Agreement.

- (b) The term ~~“Non-Disclosure Certificate”~~ shall mean the certificate annexed to this Protective Agreement by which the Reviewing Representative(s) of the Participant who have been granted access to Protected Materials shall certify their understanding that such access to Protected Materials is provided pursuant to the terms and restrictions of this Protective Agreement, and that such Reviewing Representative has read the Protective Agreement and agrees to be bound by it.
- (c) The term ~~“Reviewing Representative”~~ shall mean a person who has signed a Non-Disclosure Certificate and who is: (i) an attorney who has made an appearance in this Certificate Proceeding for Participant; (ii) attorneys, paralegals, and other employees associated for purposes of this Certificate Proceeding with an attorney described in Paragraph 3(c)(i); (iii) an expert or an employee of an expert retained by Participant for the purpose of advising, preparing for or testifying in this Certificate Proceeding; or (iv) employees or other representatives of Participant appearing in this Certificate Proceeding with significant responsibility for this docket.

4. Protected Materials shall be made available under the terms of this Protective Agreement only to Participant’s Reviewing Representatives; provided that if the Protective Materials include rates, rate-related provisions and/or credit support provisions, Algonquin may redact the rates, rate-related provisions and credit support provisions from the version of the Protected Materials provided to Participant’s Reviewing Representatives. In the event that Algonquin redacts any such information, the Parties shall meet to discuss the terms and conditions under which one or more of Participant’s Reviewing Representatives may be provided such redacted information. If no agreement is reached, Participant may submit such dispute to the Commission or the Presiding Judge, if any, for resolution.

5. Protected Materials shall remain available to Participant until the later of the date that an order terminating this Certificate Proceeding becomes no longer subject to judicial review, or the date that any other Commission proceeding relating to the Protected Materials is concluded and no longer subject to judicial review. If requested to do so in writing after that date, Participant shall, within fifteen (15) days of such request, return the Protected Materials (excluding Notes of Protected Materials) to Algonquin, or shall destroy the materials, except that copies of filings, official transcripts and exhibits in this proceeding that contain Protected Materials, and Notes of Protected Materials may be retained, if they are maintained in accordance with Paragraph 6, below. Within such time period, Participant, if requested to do so, shall also submit to Algonquin an affidavit stating that, to the best of its knowledge, all Protected Materials and all Notes of Protected Materials have been returned or have been destroyed or will be maintained in

accordance with Paragraph 6. To the extent Protected Materials are not returned or destroyed, they shall remain subject to the Protective Agreement.

6. All Protected Materials shall be maintained by Participant in a secure place. Access to those materials shall be limited to those Reviewing Representatives specifically authorized pursuant to Paragraphs 8-9.

7. Protected Materials shall be treated as confidential by Participant and by the Reviewing Representative in accordance with the Non-Disclosure Certificate executed pursuant to Paragraph 9. Protected Materials shall not be used by Participant or a Reviewing Party except as necessary for the conduct of the Certificate Proceeding, nor shall they be disclosed in any manner to any person except a Reviewing Representative of Participant who is engaged in the conduct of the Certificate Proceeding and who needs to know the information in order to carry out that person's responsibilities in the Certificate Proceeding. Reviewing Representatives may make copies of Protected Materials, but such copies become Protected Materials. Reviewing Representatives may make notes of Protected Materials, which shall be treated as Notes of Protected Materials if they disclose the contents of Protected Materials.

8. (a) A Reviewing Representative may not use information contained in any Protected Materials obtained through this proceeding to give Participant, any customer or potential customer of Algonquin or any competitor of Algonquin a commercial advantage or for any other purpose other than the prosecution or defense of the proceedings conducted under this Certificate Proceeding.

(b) In the event that Participant wishes to designate as a Reviewing Representative a person not described in Paragraph 3(c) above, Participant shall seek agreement from Algonquin. If an agreement is reached, that person shall be a Reviewing Representative pursuant to Paragraph 3(c) above with respect to those materials. If no agreement is reached, Participant may submit the disputed designation to the Commission or the Presiding Judge, if any, for resolution.

9. (a) A Reviewing Representative shall not be permitted to inspect, participate in discussions regarding, or otherwise be permitted access to Protected Materials pursuant to this Protective Agreement unless that Reviewing Representative has first executed a Non-Disclosure Certificate; provided, that if an attorney qualified as a Reviewing Representative has executed such a certificate, the paralegals, secretarial and clerical personnel employed by the same entity as the attorney and under the attorney's instruction, supervision or control need not do so. A copy of each Non-Disclosure Certificate shall be provided to counsel for Algonquin prior to disclosure of any Protected Material to that Reviewing Representative.

(b) Attorneys qualified as Reviewing Representatives are responsible for ensuring that persons under their instruction, supervision or control comply with this Protective Agreement.

authority, to find that this Protective Agreement should not apply to all or any materials previously designated as Protected Materials pursuant to this Protective Agreement.

16. [Intentionally omitted]

17. All Protected Materials filed with the Commission, the Presiding Judge, if any, or any other judicial or administrative body, in support of, or as a part of, a motion, other pleading, brief, or other document, shall be filed and served in sealed envelopes or other appropriate containers bearing prominent markings indicating that the contents include Protected Materials subject to this Protective Agreement.

18. If the Commission or Presiding Judge, if any, finds at any time in the course of this proceeding that all or part of the Protected Materials need not be protected, those materials shall, nevertheless, be subject to the protection afforded by this Protective Agreement for three (3) business days from the date of issuance of the Commission or Presiding Judge's determination, and if Algonquin files an interlocutory appeal or, if applicable, requests that the issue be certified to the Commission, for an additional seven (7) business days. Algonquin has not waived its rights to seek additional administrative or judicial remedies after any decision respecting Protected Materials or Reviewing Representatives. The provisions of 18 C.F.R. §§ 388.112 and 388.113 shall apply to any requests under the FOIA for Protected Materials in the files of the Commission.

19. Nothing in this Protective Agreement shall be deemed to preclude either Party from independently seeking through discovery in any other administrative or judicial proceeding information or materials produced in this proceeding under this Protective Agreement.

20. Algonquin does not waive its right to pursue any other legal or equitable remedies that may be available in the event of actual or anticipated disclosure of Protected Materials.

21. Participant shall not disclose the contents of Protected Materials or any other form of information that copies or discloses Protected Materials to anyone other than in accordance with this Protective Agreement and only use such contents and information in connection with this Certificate Proceeding. Any violation of this Protective Agreement and of any Non-Disclosure Certificate executed hereunder shall constitute a breach of the Protective Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Protective Agreement to be duly executed in several counterparts by their proper officers duly authorized as of the Effective Date.

**ALGONQUIN GAS TRANSMISSION, LLC**

By\_\_\_\_\_

Title\_\_\_\_\_

**[COUNTERPARTY]**

By\_\_\_\_\_

Title\_\_\_\_\_

10. Subject to Paragraph 4 above, any Reviewing Representative may disclose Protected Materials to any other Reviewing Representative of Participant as long as the disclosing Reviewing Representative and the receiving Reviewing Representative both have executed a Non-Disclosure Certificate. In the event that any Reviewing Representative to whom the Protected Materials are disclosed ceases to be engaged in this Certificate Proceeding, or is employed or retained for a position whose occupant is not qualified to be a Reviewing Representative under Paragraph 3(c), access to Protected Materials by that person shall be terminated. Even if no longer engaged in this Certificate Proceeding, every person who has executed a Non-Disclosure Certificate shall continue to be bound by the provisions of this Protective Agreement and the certification.

11. Subject to Paragraph 18, the Commission or Presiding Judge, if any, shall resolve any disputes arising under this Protective Agreement. Prior to presenting any dispute under this Protective Agreement to the Commission or Presiding Judge, the Parties shall use their best efforts to resolve it.

12. All copies of all documents reflecting Protected Materials, including the portion of the hearing testimony, exhibits, transcripts, briefs and other documents which refer to Protected Materials, shall be filed and served in sealed envelopes or other appropriate containers endorsed to the effect that they are sealed pursuant to this Protective Agreement. Such documents shall be marked ~~“PROTECTED MATERIALS”~~ and shall be filed under seal and served under seal upon the Commission, the Presiding Judge, if any, and the other Party. Any such documents containing Critical Energy Infrastructure Information shall be additionally marked ~~“Contains Critical Energy Infrastructure Information – Do Not Release”~~. For anything filed under seal, redacted versions or, where an entire document is protected, a letter indicating such, will also be filed with the Commission and served on the other Party and the Presiding Judge, if any. Counsel shall take all reasonable precautions necessary to assure that Protected Materials are not distributed to unauthorized persons.

13. If Participant desires to include, utilize or refer to any Protected Materials or information derived therefrom in any submission during this proceeding in such a manner that might require disclosure of such material to other participants in the Certificate Proceeding, Participant shall first notify counsel for Algonquin and the Commission or Presiding Judge, if any, of such desire, identifying with particularity each of the Protected Materials. Thereafter, use of such Protected Materials will be governed by procedures determined by the Commission or Presiding Judge, if any.

14. Nothing in this Protective Agreement shall be construed as precluding Algonquin from objecting to the use of Protected Materials on any legal grounds.

15. Nothing in this Protective Agreement shall preclude Participant from requesting the Commission, the Presiding Judge, if any, or any other body having appropriate

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

### **Exhibit Z-4**

**Matrix of Information Incorporated into Resource Reports  
Based on Commission Staff Comments**



**ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
DOCKET NOS. PF13-16-000 AND CP14-\_\_-000**



**EXHIBIT Z-4  
RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS  
ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
<b><u>Resource Report 1 –General Project Description</u></b>	
1. Section 1.3 indicates that the maximum allowable operating pressure (MAOP) for the 42-inch-diameter mainline downstream of the Stony Point and Southeast Compressor Stations would be 850 pounds per square inch gauge. Revise Section 1.3 to include the current MAOPs of the existing pipeline sections and the proposed MAOPs of the other proposed pipeline segments.	Section 1.3 has been updated to reflect the MAOPs for the existing pipeline segments and the proposed pipeline segments.
2. Confirm that there are no locations within the proposed take-up and relay pipeline segments where Algonquin would need to deviate from the existing pipeline trench, or identify all such locations.	A response is provided in Section 1.3.1.1.
3. Identify a proposed alignment across the Hudson River.	The proposed alignment across the Hudson River has been selected. See Section 1.3.1 of Resource Report 1 and Section 10.5.3 of Resource Report 10.
4. Explain why the Willimantic, Guilford, and Glastonbury Metering and Regulating (M&R) stations need to be completely rebuilt.	A response is provided in Section 1.3.2.2.
5. Section 1.3.2 identifies eight existing M&R stations in Hartford County, Connecticut and Middlesex, Plymouth, and Norfolk counties, Massachusetts where no work is proposed. Confirm that no pressure testing or uprating would be required at these facilities.	A response is provided in Section 1.3.2.
6. Provide a table listing by milepost (MP) for each right-of-way segment where Algonquin is proposing to use more than 75 feet of construction right-of-way and provide site-specific justification for the increased width.	A response is provided in Section 1.4.1.
7. Provide the acreage of new land that would be permanently affected during operation of the three new M&R stations and the rebuild of the Willimantic M&R Station.	A response is provided on Table 1.4-3.
8. Table 1.4-1 includes a column identifying the widths of the existing and proposed rights-of-way in feet. Clarify if these widths equate to the widths of the existing and proposed maintained rights-of-way.	Table 1.4-1 has been revised to clarify the widths.

**ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
DOCKET NOS. PF13-16-000 AND CP14-\_\_-000**



**EXHIBIT Z-4  
RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS  
ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
9. For the Appendix 1A drawings provide the following:	
a. Confirm that Algonquin plans to clear all of the forested areas within the workspace polygons depicted on the drawings and that none of this new workspace would be maintained for operational use following construction as indicated in Table 1.4-3.	Clarification is provided in Section 1.4.2.
b. Indicate on the compressor station and M&R drawings where aboveground facilities would be added or removed.	See compressor station and M&R station plans in Appendix 1A. Design information was provided for all compressor stations (except Oxford, compressor restaging only), existing M&R stations requiring modifications outside of the current developed area of the sites, and the three new M&R stations.
c. Label on the compressor station plot plans the Noise Sensitive Areas (NSAs) within 1 mile of the compressor station sites.	See Resource Report 9, Appendix 9E.
d. The aerial photography for the 42-inch-diameter mainline pipeline, 36-inch-diameter loop extension, and 12-inch-diameter lateral loop is dated February 2012. Aerial photography cannot be more than 1 year old. Demonstrate that the photography used for these pipeline segments would still be accurate at the time of the application filing or provide updated aerial photography.	Algonquin field verified through detailed survey that the aerial photography provided on the alignment sheets and aboveground facility plans accurately represents current site conditions.
10. A column heading in Table 1.4-4 indicates that the column identifies upgrade requirements; however, the column appears to just provide a description of the road. Clarify those roads requiring upgrades or improvements and provide a description for the work that would be done to make them usable for the project. Include the width of the upgraded road and associated acreage of disturbance for the road.	Updated access road information is provided in Section 1.4.3 and on Table 1.4-4.
11. Provide the width and length and associated acreage of the new permanent access roads for the Oakland Heights and West Roxbury M&R Stations.	Updated access road information is provided in Section 1.4.3 and on Table 1.4-4.
12. Provide the locations, sizes (acres), and existing land uses of the proposed pipe and contractor storage yards associated with the project.	Updated information on proposed pipe and contractor storage yards is provided in Section 1.4.4 and on Table 1.4-5.
13. Provide a description of the procedures that would be used for the 0.5 mile of pipe to be abandoned.	A response is provided in Section 1.5.1.2.

**ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
DOCKET NOS. PF13-16-000 AND CP14-\_\_-000**



**EXHIBIT Z-4  
RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS  
ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
14. Reconcile the apparent discrepancy in the pipeline mileage numbers for New York between Tables 1.3-1 and 1.5-1.	Table 1.5-1 has been updated accordingly.
15. Describe how water would be removed from the trench should areas of high water table be encountered.	Section 1.5.1.1 describes how water would be removed from the trench should areas of high water table be encountered.
16. For each segment of the proposed project, provide a site-specific explanation for why use of the Federal Energy Regulatory Commission’s (FERC or Commission) third-party compliance monitoring program is not warranted.	A response is provided in Section 1.6.
17. Clarify whether the estimated construction personnel identified in Table 1.7-1 is the average, peak, or total anticipated workforce and ensure the information is consistent with the workforce information provided in Table 5.3-1 in Resource Report 5.	Table 1.7-1 has been clarified.
18. Section 1.10 indicates that Algonquin expects to file for federal and the majority of the state authorizations at the same time as or prior to submitting its certificate application with the FERC. However, Table 1.11-1 indicates that the certificate application would be filed in February 2014 and most of the other permits would be submitted in the second quarter of 2014 or March 2014. Rectify this apparent discrepancy. Provide justification for any permits that would not be filed at the same time as or prior to the FERC application.	Section 1.10 and Table 1.11-1 have been updated.
19. In Table 1.11-1, include the need for FERC authorization to abandon facilities under Section 7(b) of the Natural Gas Act.	Table 1.11-1 has been updated.
20. Table 1.11-1 indicates that a Coastal Zone Management Consistency Determination is needed from the Massachusetts Office of Coastal Zone Management; however, the project does not appear to be within the coastal zone in Massachusetts. Rectify this apparent discrepancy.	Table 1.11-1 has been updated.
21. Revise the information in Section 1.12.3, as needed, to reflect information received from the U.S. Fish and Wildlife Service (USFWS) in their November 7, 2013 comment letter and any subsequent state or federal consultation regarding protected species.	Section 1.12.3 has been updated to reflect the current status of state and federal protected species consultation.

**ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
DOCKET NOS. PF13-16-000 AND CP14-\_\_-000**



**EXHIBIT Z-4  
RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS  
ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
22. Identify any non-jurisdictional facilities associated with the project. If non-jurisdictional facilities are identified, provide the following information: a list of the permits required and the permitting agencies with jurisdiction over the facilities; the time period of construction and operation of the non-jurisdictional facilities; the anticipated construction methods; and the anticipated acreage impacts.	A response is provided in Section 1.13.
23. Provide a map showing the location of each of the projects with potential cumulative impacts listed in Table 1.14-1 and add a column to the table for each project’s approximate distance to the proposed project facilities.	Maps showing the location of each of the projects with potential cumulative impacts listed in Table 1.14-1 are provided in Appendix 1F. Table 1.14-1 has been updated by adding a column to the table for each project’s approximate distance to the proposed project facilities.
24. Provide a copy of the Best Drilling Practices Horizontal Directional Drill (HDD) Plan identified in Section 1.14.1 of Resource Report 1.	A copy of the Best Drilling Practices Horizontal Directional Drill (HDD) Plan is provided in Resource Report 2, Appendix 2E.
<b><u>Resource Report 2 – Water Use and Quality, Wetlands</u></b>	
1. Section 2.2.4 lists identified wells within 150 feet of the construction work area for the pipeline facilities but does not list any springs. Clarify and identify if springs are located within 150 feet of the project and if so, add to Table 2.2-2. Also include locations of wells and springs within 150 feet of construction work areas associated with the aboveground facilities.	There are no springs within 150 feet of the construction work area for the Project. For a complete listing of wells, see Section 2.2.4 and Table 2.2-2.
2. Section 2.2.6.1 states that if any blasting is required within 150 feet of any water supply wells, Algonquin would conduct pre- and post-construction monitoring of the wells. Clarify that Algonquin would offer pre- and post-construction monitoring of water supply wells within 150 feet of any construction workspace, including access roads, pipe yards, and compressor stations.	If any blasting is required within 150 feet of any water supply wells, Algonquin will contact the landowner and offer to conduct pre- and post-construction monitoring of well yield and water quality. See Section 2.2.6.1.
3. Provide the results of consultation with the New York State Department of Health regarding the locations of public water supply wells and springs within 150 feet of the project, well head and aquifer protection programs and areas, and surface water supply intakes located within 3 miles downstream of waterbodies affected by the project in New York.	The requested information is provided in Section 2.2.4, Table 2.2-2, Section 2.2.4.1, Table 2.2-3 and Section 2.3.4.3.

**ALGONQUIN GAS TRANSMISSION, LLC**  
**Algonquin Incremental Market (“AIM”) Project**  
**DOCKET NOS. PF13-16-000 AND CP14-\_\_-000**



**EXHIBIT Z-4**  
**RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS**  
**ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
4. Section 2.2.5 describes how the project has the potential to encounter contaminated groundwater during construction.	
a. Identify which areas would require field sampling for contaminated soils or groundwater.	The requested information is provided in Sections 2.2.5.1 and 2.2.5.2. Additional information is also provided in Appendix 2B.
b. Provide a plan to delineate and analyze the areas of potential contamination within the construction right-of-way.	The requested information is provided in Sections 2.2.5.1 and 2.2.5.2. Additional information is also provided in Appendix 2B.
c. Describe how potentially contaminated groundwater associated with dewatering and contaminated sediment would be managed during construction.	The requested information is provided in Section 2.2.6.
d. Describe the types of engineering controls (e.g., grout trench breakers) that would be used to ensure that contaminated groundwater does not migrate off site along the pipeline corridor, including contaminated runoff due to vegetation clearing.	The requested information is provided in Section 2.2.6.
e. Provide the results of consultation with the appropriate agencies on any groundwater sampling and management measures developed.	The requested information is provided in Sections 2.2.5.1 and 2.2.5.2.
5. Provide an updated list of waterbodies crossed by the project, including access roads (if applicable), following completion of field surveys.	An updated list of waterbodies crossed by the Project is included in Appendix 2C.
6. Provide a copy of the Stormwater Pollution Prevention Plan being prepared for the New York City Department of Environmental Protection to address impacts on the Croton Watershed.	Refer to Section 2.3.1.1 for additional information on the Stormwater Pollution Prevention Plan and impacts on the Croton Watershed.
7. Provide a plan describing the measures that Algonquin would implement to protect the Catskill Aqueduct at MP 9.7 and include any comments on the plan from the aqueduct managers.	See Section 2.3.1.1.
8. Provide a list of streams where blasting would be required and the results of consultation with agencies regarding impacts and mitigation measures.	See Section 2.3.5.5 and Table 2.3-5.
9. Confirm that no access road construction or improvement activities would impact streams or wetlands.	See Sections 2.3.2.3 and 2.4.2.3.
10. Section 2.3.2.3 states that no impacts on navigation would occur as a result of using the HDD method across the Hudson River. Describe any use of boats, barges, or other	See Section 2.3.2.4.

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vessels that would be used to support the HDD and their potential impacts on river use and resources.	
11. In Section 2.3.4.2, reference the Hudson River Estuary Action Agenda 2010-2014, and address any potential conflicts with the goals and objectives of the plan.	See Section 2.3.4.2.
12. Provide a copy of the stream crossing analysis being prepared for the New York State Department of Environmental Conservation (NYSDEC) as justification for any alternative, in-stream crossing method for all permanently flowing streams where HDD is not proposed and the results of any subsequent consultation.	This information is still in development and will be included in the 401 Water Quality Certification Application that will be filed with the NYSDEC. A copy will be filed with the Secretary at the same time it is filed with the NYSDEC. See Section 2.3.5.4.
13. Discuss the potential for the HDDs to penetrate a lower aquifer, and describe the precautions that would be implemented to prevent the vertical migration of contamination into a lower aquifer.	See Section 2.2.6.1.
14. Provide:	
a. The results of the geotechnical surveys for the proposed HDDs, including the interpretation of the geotechnical information as it relates to the feasibility of each HDD and the potential challenges that may be associated with each proposed drill.	See Section 1.12.2 in Resource Report 1.
b. The site-specific crossing plans and HDD contingency plans. The contingency plans should include how Algonquin would:	Refer to Section 2.3.5.4. Also, see the Best Drilling Practices, Monitoring and Clean-up of Horizontal Directional Drilling Inadvertent Returns for the AIM Project in Appendix 2E.
i. handle any inadvertent release of drilling mud into the waterbody or areas adjacent to the waterbody, including procedures to contain inadvertent releases;	See the Best Drilling Practices, Monitoring and Clean-up of Horizontal Directional Drilling Inadvertent Returns for the AIM Project in Appendix 2E.
ii. seal the abandoned drill hole; and	See the Best Drilling Practices, Monitoring and Clean-up of Horizontal Directional Drilling Inadvertent Returns for the AIM Project in Appendix 2E.
iii. clean up any inadvertent releases in the water.	See the Best Drilling Practices, Monitoring and Clean-up of Horizontal Directional Drilling Inadvertent Returns for the AIM Project in Appendix 2E.

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15. Identify the anticipated volume of water needed for each HDD. Include a description of anticipated disposal methods for drilling mud and cuttings. Identify any additives besides bentonite that would likely be added to the drilling mud and verify that these additives would not have an adverse effect on water resources in the event that there is a release of drilling fluid into a waterbody or wetland.	See Section 2.3.5.4 and Table 2.3-4.
16. Identify the sources and anticipated discharge locations for the 8 million gallons of water that would be obtained to hydrostatically test the pipeline. Confirm that each pipeline segment would be tested as one segment and that water would be discharged within the same watershed from where it was withdrawn. If the test water would be discharged on land as suggested in Section 2.3.6.1, describe the anticipated rate and duration of the discharge and identify the potential receiving waterbody/wetland or municipal facility once the water passes through the dewatering structures.	See Section 2.3.6.1.
17. Describe how the integrity of the various aboveground facilities would be tested. If hydrostatically tested, indicate the anticipated volume, source, and discharge location for each test.	See Section 2.3.6.1.
18. Provide National Wetland Inventory maps for the project area.	See maps in Appendix 1A.
19. Provide a copy of the wetland delineation report for the project.	The wetland delineation reports are included in Appendix 2F.
20. Identify which of the wetlands listed in Table 2C-1 were field delineated versus delineated using maps and update Table 2C-1 to include wetland impacts within the proposed Hudson River Crossing Study Area (MPs 2.62 to 4.94). Also, provide more detailed classifications for the wetlands listed in Table 2C-1, including whether they are temporarily flooded (A), saturated (B), seasonally flooded (C), etc.	See Table 2D-1, Wetlands Crossed by the AIM Project, in Appendix 2D.
21. Provide any additional information resulting from wetland site visits completed with the U.S. Army Corps of Engineers (USACE) and NYSDEC. Provide an updated Table 2.4-1 that incorporates completed survey results and agency (e.g., USACE and NYSDEC) coordination/consultation.	See Sections 2.4.2.1 and 2.4.5 and Table 2.4-1.



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22. Describe impacts on wetlands from aboveground facilities and access roads.	See Sections 2.4.2.2 and 2.4.2.3.
23. Provide a copy of the conceptual wetland mitigation plan for the project with the FERC application.	The Conceptual Mitigation Plan is included in Appendix 2H.
24. Indicate what other agencies besides the USACE (e.g., the NYSDEC, NYS municipalities) have been consulted regarding wetland mitigation. Summarize the discussions with these agencies and provide copies of any new correspondence with the agencies pertaining to wetland mitigation requirements and mitigation plan development. Include a discussion of any proposals for compensation for the permanent loss of wetlands or the conversion of forested wetlands to non-forested wetland types.	The Conceptual Mitigation Plan is included in Appendix 2H.
25. Add USACE district boundaries to all maps in this report and provide revised copies of the maps.	See Section 2.3.2 and Figures 2.2-2, 2.3-1, and 2.3-2.
26. Address the following questions regarding Table 2E-1 for requested variances (which should be called alternate measures or modifications) to the FERC's Wetland and Waterbody Construction and Mitigation Procedures:	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
a. Provide a separate appendix with site-specific maps showing each of the locations where modifications are being requested.	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
b. Add a column to Table 2E-1 that identifies the crossing width for each wetland variance being requested and confirm that wetland disturbance acreages listed in Table 2C-1 reflect the modified widths.	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
c. For wetland B13-RLR-W2, provide more justification as to why a greater than 75 foot right-of-way is required and whether construction could occur during dry subsoil conditions.	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
d. For wetland B13-RLR-W9, provide clarification if Algonquin is proposing to bore beneath the wetland in conjunction with Highway 210, Cedar Pond Brook (B13-RLR-S10), and Cedar Flats Road. If boring is proposed, provide justification for the requested modification for a greater than 75-foot-wide right-of-way at this wetland location.	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
e. It appears on the alignment sheets that the pipeline does not cross wetland B13-	See Table 2G-1, ATWS Wetland Variances for the AIM Project



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RLR-W10; according to Table 2C-1 the crossing length is 0 feet. Provide additional justification for the requested modification for a greater than 75-foot-wide right-of-way width in this wetland.	Pipeline Segments, provided in Appendix 2G.
f. The mileposts provided for wetland B13-SPLR-W7 and wetland A13-SELR-W4 listed in Table 2E-1 do not match their milepost locations on the alignment sheets. Clarify the correct milepost locations for these wetlands and revise Table 2E-1 accordingly.	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
g. The additional temporary workspace justifications listed for the Line 36A Loop Extension state that the extra workspace is required for “the equipment associated with constructing 42 inch pipeline in wetlands”, when a 36-inch-diameter pipeline is being proposed for this loop. Provide additional justification as to why additional construction right-of-way is being requested for the installation of a 36-inch-diameter pipeline (particularly for B13-CLR-W4 where a 100-foot workspace is being requested).	See Table 2G-1, ATWS Wetland Variances for the AIM Project Pipeline Segments, provided in Appendix 2G.
<b><u>Resource Report 3 – Fish, Wildlife, and Vegetation</u></b>	
1. The portion of the project crossing the Hudson River is within the Hudson River Estuary and within the extent of tidal influence and salt water intrusion. This means there is the potential for protected marine species to occur as transients in the project area, although relatively infrequent or unlikely. Provide a discussion of all marine species (i.e., harbor seals, dolphin/porpoise) with the potential to occur within the project portion of the Hudson River Estuary and a statement regarding how the project would ensure compliance with the Marine Mammal Protection Act.	See Sections 3.3.5 and Section 3.4.1.
2. Provide an update on consultations with the New York State Office of Parks, Recreation & Historic Preservation; the Town of Haverstraw; the Westchester County Department of Parks, Recreation and Conservation; and any other appropriate agencies regarding any specific plans required for construction through the sensitive habitats identified in Section 3.4.3.	See Section 3.3.7.3.
3. Identify any fisheries time-of-year restrictions on construction for stream crossings identified in Table 2B-1 of Resource Report 2 and discuss Algonquin’s plans for addressing these restrictions.	See Section 3.2.7 for a discussion on fisheries time-of-year restrictions on construction for stream crossings.

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4. Section 3.4.3.2 states that “a variety of marine species such as bluefish, anchovy, silversides, and blue claw crab may enter the area”. Additionally, marine species are included in Section 3.2.5. Therefore, Table 3.2-1 should identify marine species, not just estuarine and diadromous species. Revise accordingly.	Table 3.2-1 has been updated.
5. Include an Invasive Species Management Plan and indicate Algonquin’s willingness to implement the invasive species permit conditions contained in the Connecticut Department of Energy and Environmental Protection’s (CTDEEP) October 11, 2013 comment letter.	Section 3.3.3 and Appendix 3F: Invasive Plant Species Control Plan
6. Identify proposed pipe yards and contractor storage yards including acreage by vegetation type and any disturbance to sensitive resources.	Pipe yards and contractor storage yards are discussed in 3.3.1.3.
7. Clarify/provide acres and types of vegetation affected by the project (additional temporary workspace, aboveground facilities, staging areas, and access roads). Update Table 3C-1 for aboveground facility impacts.	Vegetation affected by the Project is discussed in 3.3.4 and in Table 3C-1 in Appendix 3C.
8. Section 3.3.1.4 states that two new permanent access roads for the West Roxbury and Oakland Heights M&R Stations would be constructed in wooded areas. Clarify the vegetative communities of the wooded areas that would be impacted by new road construction.	Vegetative communities of the wooded areas that would be impacted by new road construction are discussed in 3.3.1.4.
9. Clarify whether rare plant surveys were conducted for the project area and if so, provide the results of the surveys.	The status of rare plant surveys are discussed in Section 3.3, Section 3.4.1.1 and Section 3.4.1.4.
10. Provide the results of consultation with the CTDEEP regarding the potential for twinflower and yellow fringed orchid to occur within the project area.	The results of consultation with the CTDEEP are discussed in Section 3.4.1.4.
11. File any correspondence or documentation of consultation with federal, state, or local agencies not previously filed with the Commission regarding concerns, recommendations, or the need to conduct surveys for sensitive species. This includes additional correspondence or other documentation related to consultation with the USFWS for the bald eagle, Indiana bat, northern long-eared bat, New England	Section 3.5.1.2 provides additional documentation of consultation with federal, state, or local agencies. Also see Appendix 1E in Resource Report 1.

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cottontail, bog turtle, and small-whorled pogonia.	
12. In its response to comments, Algonquin states that it is committed to conducting any surveys deemed necessary by agencies to confirm the presence/absence of protected species. Address the November 7, 2013 letter from the USFWS with respect to surveys and provide updates on the status of ongoing consultations with the USFWS regarding the need for surveys or other measures to minimize impacts.	Sections 3.4.1 and 3.5.1.2 addresses the November 7, 2013 letter from the USFWS with respect to surveys.
13. Per the November 7, 2013 letter from the USFWS, the northern red-bellied cooter ( <i>Pseudemys rubriventris</i> ) has the potential to occur within the Town of Middleborough, and the initial project determination of <i>no effect</i> was based on outdated distribution information. Therefore, address the Northern red-bellied cooter in Section 3.5 and update Table 3.5-1 to include the northern red-bellied cooter.	Section 3.4.1 addresses the November 7, 2013 letter from the USFWS with respect to surveys.
14. The northern long-eared bat ( <i>Myotis septentrionalis</i> ) was proposed for federal listing as endangered on October 2, 2013 and is identified by the USFWS (IPaC and November 7, 2013 letter) as having the potential to occur within project counties. Address this species in Section 3.5 and update Table 3.5-1 to include the northern long-eared bat.	Section 3.4.1 addresses the November 7, 2013 letter from the USFWS with respect to surveys.
15. Provide the results of the Indiana bat habitat assessment. Also, update the state/county locations of Indiana bat occurrence in Table 3.5-1 to match the text in Section 3.5.1.1.	Section 3.4.1 addresses the November 7, 2013 letter from the USFWS with respect to surveys.
16. Table 3B-1 in Appendix 3B provides a comprehensive list of wildlife species by habitat type, including Estuary. Include a discussion of this habitat type in Section 3.4.1.	A discussion on the Estuary habitat type is provided in Section 3.3.5.
17. Indicate which best management practices Algonquin is proposing to use to protect the timber rattlesnake and provide the timber rattlesnake conservation plan and any comments from the NYSDEC on this plan.	Section 3.4.1.3 provides additional information about timber rattlesnake BMPs.
18. Indicate which conservation measures would be implemented for the protection of the eastern box turtle in Connecticut and any comments from the CTDEEP on these	Section 3.4.1.4 provides additional information regarding conservation measures that will be implemented for the protection of the eastern box turtle.

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measures.	
19. Provide all new information developed during the preparation of the Connecticut comprehensive conservation plan for Connecticut state-listed species identified in CTDEEP's October 11, 2013 comment letter.	Section 3.4.1.4 provides all new information developed during the preparation of the Connecticut comprehensive conservation plan for Connecticut state-listed species.
20. Provide the results of the USFWS determination of presence of federally-listed species within the vicinity of the Burrillville Compressor Station site in Rhode Island and M&R stations added after the initial consultation was conducted.	Section 3.4.1.5 provides the results of the USFWS determination of the presence of federally-listed species within the vicinity of the Burrillville Compressor Station site in Rhode Island and M&R stations.
21. Provide a table listing migratory bird species and their associated habitats for the Atlantic Northern Forest Bird Conservation Region (BCR 14). This table may be limited to those species associated with habitats that would be impacted by the project.	Section 3.5 discusses migratory birds. Table 3E-1 in Appendix 3E lists migratory bird species and their associated habitats for the Atlantic Northern Forest Bird Conservation Region.
22. Provide correspondence or other documentation of follow-up consultation with the USFWS regarding the recommendation contained in their November 7, 2013 comment letter requesting that vegetation removal not occur during the migratory bird nesting season.	Section 3.5 addresses the November 7, 2013 letter from the USFWS with respect to surveys.
23. Update the Atlantic Sturgeon discussion in Section 3.5.1.1 to include the potential occurrence of all distinct population segments with the potential to occur in the project area, as referenced in the National Marine Fisheries Service (NMFS) letter dated May 30, 2013.	Section 3.4.1.2 provides an updated discussion on the Atlantic Sturgeon.
24. Update the discussion and potential occurrence for both the Atlantic and Shortnose sturgeon based on the information provided in the NMFS letter dated May 30, 2013.	Section 3.4.1.2 provides an updated discussion on the sturgeon.
<b><u>Resource Report 4 – Cultural Resources</u></b>	
1. Provide copies of all correspondence with the Connecticut State Historic Preservation Office (SHPO), Massachusetts SHPO, New York SHPO, and Rhode Island SHPO regarding the need for cultural resources surveys and level of intensity of those surveys.	See Appendix 4A.  ♦ New York SHPO concurred with PAL’s proposal to perform an archaeological identification survey for proposed AIM Project facilities in New York on July 19, 2013;

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	<ul style="list-style-type: none"> <li>◆ Connecticut SHPO concurred with PAL’s proposal to perform an archaeological identification survey for proposed AIM Project facilities in Connecticut on September 16, 2013;</li> <li>◆ Rhode Island SHPO issued a permit to perform an archaeological identification survey for the proposed AIM Project facility in Burrillville, Rhode Island on November 1, 2013; and</li> <li>◆ Massachusetts SHPO issued a permit to perform an archaeological overview survey for the proposed AIM Project West Roxbury Lateral and M&amp;R Station on June 18, 2013.</li> </ul>
<p>2. File copies of the technical proposals and addendum(s) sent to the SHPOs for comments.</p> <p>All material filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: “CONTAINS PRIVILEGED INFORMATION--DO NOT RELEASE.”</p>	<p>See Appendix 4B.</p> <p>Please note that the archaeological site evaluation proposals will be submitted to the SHPOs for review upon receipt of their comments on the identification survey reports.</p> <ul style="list-style-type: none"> <li>◆ New York Archaeological Identification Survey Proposal – May 23, 2013;</li> <li>◆ Connecticut Archaeological Identification Survey Proposal – May 23, 2013;</li> <li>◆ Connecticut Archaeological Identification Survey Proposal Addendum (E-1 System Loop) – July 29, 2013;</li> <li>◆ Rhode Island Archaeological Identification Survey Proposal (incorporated within Archaeological Overview Survey Memorandum) – October 2013; and</li> <li>◆ Massachusetts Archaeological Overview Survey Proposal – May 23, 2013.</li> </ul>
<p>3. Describe when Algonquin plans to complete and file the survey reports and the appropriate SHPOs comments for the project. These reports should include, but not limited to, the following:</p>	<p>See appropriate technical report transmittal letters in Appendix 4A. Algonquin’s cultural resource consultant, The Public Archaeology Laboratory, Inc. (PAL) filed the survey reports to the appropriate SHPOs, Native American groups, and other consulting parties on</p>

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a. a discussion of the project’s area of potential effects;	See Section 4.4; Appendix 4C – Chapter 1 of each technical report.
b. accurate map legends to depict surface finds and test pits;	See Appendix 4C – Results chapters of each technical report.
c. ethnographic analysis of Native American groups or other groups with ties to the project area;	N/A; Algonquin anticipates that the FERC will consult directly with Native American groups who have an interest in AIM Project facilities. Native American groups have informed Algonquin that they will be working with FERC in a government-to-government fashion.
d. for each cultural resource identified, provide a large-scale individual resource map (such as 1 inch = 200 feet) showing topography, areas surveyed or tested, artifact concentrations, cultural features, structures, resource boundaries, pipeline centerline, construction right-of-way, and other project features;	See Appendix 4C – Results chapters of each technical report.
e. photographs and/or illustrations of visible cultural features and diagnostic/important artifacts; and	See Appendix 4C – Results chapters of each technical report.
f. for each resource identified, provide an analysis of the data collected and further discussion/basis for recommendations on eligibility for listing on the National Register of Historic Place.	See Appendix 4C – Results and Recommendations chapters for each technical report.
4. Provide information regarding the stone walls that have been identified during the cultural resources survey and how they would be treated.	See Appendix 4C – Results and Recommendations chapters for each archaeological survey technical report; Appendix E for New York and Connecticut pipeline survey reports; Appendix F for New York and Connecticut M&R/Compressor Station survey reports. No stone walls were identified within the Rhode Island or Massachusetts AIM Project facility study areas.
5. Under Section 4.3.1, 2 <sup>nd</sup> paragraph, clarify if the New York SHPO concurred with the archaeological testing in a letter dated June 19, 2013 or July 19, 2013.	July 19, 2013: see Appendix 4A.
6. Provide a summary of the areas of concern by the Mohegan Tribe and how those areas	N/A; Mohegan Tribal representatives accompanied Algonquin archaeologists during fieldwork along the E-1 System Loop. Tribal

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would be investigated or treated.	representatives expressed an interest in monitoring archaeological fieldwork for other AIM Project facilities as well. No specific information was conveyed by Mohegan Tribal representatives to the archaeologists during fieldwork concerning areas of Native American interest, aside from general locational areas within the study area. Algonquin assumes that FERC will consult directly with Native American tribes who have an interest in AIM Project facilities. Native American groups have informed Algonquin that they will be working with FERC in a government-to-government fashion.
7. Clarify if the project crosses Palisades Interstate Park, which is a National Historic Landmark.	The AIM Project does not cross the Palisades Interstate Park; the Project only crosses the Palisades Interstate Parkway; see Appendix 4C (NY Historic Architectural Properties Overview/Identification Survey Report, Appendix C [Palisades Interstate Park National Register of Historic Places Documentation]).
8. Provide resumes of key cultural resources personnel and their roles in collecting, analyzing, and reporting information in the reports.	See Appendix 4D.
9. Revise the Unanticipated Discovery Plan included as Appendix 4-C in the Environmental Report filed as part of Algonquin’s application to the FERC, as follows:	See Appendix 4E.
a. Page 4, ninth bullet – replace “FERC” with “CRM”;	See Appendix 4E.
b. Page 5, second bullet – replace “will” with “may”;	See Appendix 4E.
c. Page 5, Principle 7– replace “inadvertently discovered” with “encountered”;	See Appendix 4E.
d. Page 6, Principle 8, eighth bullet, first sub bullet, second sentence – replace “FERC will consult” with “CRM will contact”;	See Appendix 4E.
e. Page 12 and 13, delete Non-Federally Recognized Tribal Contacts (Consulting Parties).	See Appendix 4E.



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10. Document that the revised Unanticipated Discovery Plan was submitted to the appropriate SHPOs and file their comments on the plan with the FERC.	See Appendix 4A: the revised Unanticipated Discovery Plan was submitted to the appropriate SHPOs on February 24, 2014.
<b><u>Resource Report 5 – Socioeconomics</u></b>	
1. Table 5.1-1 indicates that there are 3.3 miles in Rockland County, New York and 11.7 miles in Westchester County, New York. However, Table 1.3-1 in Resource Report 1 indicates 6.8 miles in Rockland County and 8.2 miles in Westchester County. Revise this apparent discrepancy. Also, include a MP column in Table 5.1-1, similar to Table 1.3-2 in Resource Report 1.	See Section 5.2, Table 5.1-1.
2. For comparison purposes, include a column in Table 5.2-1 for the 2012 estimated U.S. Census Bureau population data referenced in the paragraphs following the table.	See Section 5.2.1, Table 5.2-1.
3. Include a totals row by state in Table 5.2-3 as reference is made to those totals in Section 5.3.3.	See Section 5.2.3, Table 5.2-3.
4. Section 5.2.6 states that, in addition to the pipeline, the analysis focused on the counties and municipalities where aboveground facilities could result in socioeconomic impacts. Clarify in this section whether those are just the counties and municipalities where the new metering and regulating (M&R) stations are proposed or if it includes other facilities as well. Specifically identify the applicable aboveground facilities included in this particular analysis.	See Section 5.2.6.
5. In Section 5.2.6, provide tables comparing the racial/ethnic and economic statistics of the counties, census tracts, and block groups crossed by the proposed project in New York and Connecticut. Also, revise Tables 5.2-5 and 5.2-6 for Massachusetts to include the statistics for all the census tracts and block groups crossed, not just those that meet the environmental justice criteria.	See Section 5.2.6. Tables 5.2-6 and 5.2-7 have been added for New York and include all the census tract and block groups crossed. Tables 5.2-8 and 5.2-9 have been added for Connecticut and include all the census tract and block groups crossed. Previous Tables 5.2-5 and 5.2-6 for Massachusetts are now Tables 5.2-10 and 5.2-11 and include all the census tract and block groups crossed.
6. Provide the number of permanent employees that would be hired to operate the proposed facilities.	See Section 5.3.1 for a discussion on the number of permanent employees that would be hired to operate the proposed facilities.
7. Clarify the apparent discrepancies between workforce numbers identified in Section	See Section 5.2.3. Table 5.3-1 has also been revised to be consistent



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5.3.2 (1 <sup>st</sup> paragraph and Table 5.3-1) and construction personnel numbers provided in Table 1.7-1 of Resource Report 1.	with Table 1.71- of Resource Report 1.
8. Section 5.3.2 indicates that approximately 10 to 78 percent of the construction workers are expected to be local hires, and that this is "substantial." Explain the reason for the wide range in numbers, and justify how 10 percent is considered substantial.	See Section 5.3.2.
9. In Section 5.3.5, include a table on the ad valorem taxes to be paid over the life of the project and provide an estimate in dollars of the anticipated purchases of materials from local (New York, Connecticut, and Massachusetts-based) vendors during construction and operation of the project.	See Section 5.3.5. Table 5.3-5 has been added with an estimate of the ad valorem taxes to be paid over the life of the AIM Project and provides an estimate in dollars of the anticipated purchases of materials from local (New York, Connecticut, and Massachusetts-based) vendors during construction and operation on each County and municipality affected by the AIM Project.
10. Provide information on the location (e.g., milepost (MP), distance from the proposed construction right-of-way) and orientation (north, south, east, or west) of schools and hospitals within 0.5 mile of the proposed facilities and provide additional details about the existing capacity of these facilities (e.g., number of hospital beds, number of students).	Table 5.2-5 in Section 5.2.4 has been developed to provide this additional information. Table 5.2.4 has information already regarding the number of hospital beds on a county level. However, Algonquin did not find any hospitals located within 0.5 mile of the pipeline facilities, and as a result did not provide that information in Table 5.2.5. Therefore, Table 5.2.5 only concentrates on new information related to schools.
11. Provide data and analysis of the existing traffic levels for the roads along the West Roxbury Lateral and how the project would affect those levels during construction and operation. At a minimum, the analysis should include the current level of service (LOS) for the applicable roads and whether the project would change the LOS during construction and operation. Other information that would be helpful includes a sampling of the average daily traffic counts of the major roads affected.	See Section 5.3.7. Algonquin provided a draft of the Traffic Management Plan prepared for the West Roxbury Lateral with the Secretary on January 31, 2014 for review and comment. Algonquin anticipates filing updated plans for the West Roxbury Lateral and the New York segments of the Project with the Secretary on or before May 30, 2014.
12. Section 5.3.7.1 states that Algonquin would schedule work within roadways to avoid commuter traffic and school buses. However, construction work is identified to occur between the hours of 7 am and 6 pm. Clarify the construction work hours within roadways that would be implemented to avoid commuter traffic and school bus	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.

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schedules.	
13. To assist in addressing scoping comments regarding potential impacts on traffic, particularly in the New York and Massachusetts portions of the project, and access during construction, the site-specific traffic and access management plans to be prepared by Algonquin as indicated in Resource Report 1 should include, at a minimum, the following appropriate details:	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.
a. width of the street to be closed and the width of the street to remain open to through traffic;	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.
b. temporary traffic controls (e.g., detours, durations, etc.) and type of control devices and temporary control zone activities;	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.
c. pedestrian, bicycle, and worker considerations;	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.
d. hand signaling control including how many controllers would likely be required at each site, whether and how local police or other public service employee support would be needed in each area, and who would be responsible for compensation of any traffic controllers, police, or other public employees; and	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.
e. season, timing, and duration of construction (e.g., estimated months, when construction would occur (e.g., day, night, weekdays, weekends), and length of time required to complete construction along each particular street).  A preliminary draft of the site-specific traffic and access management plan for at least the West Roxbury Lateral should be provided for review and comment prior to the filing of Algonquin’s formal application with the FERC.	See Section 5.3.7 and the interim Traffic Management Plan provided in Appendix 5B.
14. Assess the potential economic impacts of construction on local communities and businesses associated with temporary traffic delays and impeded access.	See in Section 5.3.7.1.
<b><u>Resource Report 6 – Geology</u></b>	
1. Provide a table by MP of areas that may require blasting along the pipeline segments. Also indicate whether blasting is anticipated at any of the new or expanded	Refer to the AIM Project Rock Removal Plan Provided in Appendix 6C.

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aboveground facilities.	
2. Provide a detailed blasting plan specific to the proposed project.	Refer to the AIM Project Rock Removal Plan Provided in Appendix 6C.
3. Section 6.4 identifies the West Roxbury Crushed Stone Quarry as a commercial quarry located in close proximity to the project. Provide a description of current quarry operations and any planned expansions. Also include a detailed evaluation of potential impacts on the quarry associated with the proposed project and similarly, impacts of quarry operations on construction and operation of the West Roxbury Lateral and M&R station. The evaluation should include all aspects of construction and operation (e.g., traffic, blasting, safety, etc.).	See Section 6.4. An analysis of the effects of the quarry blasting is being prepared. Algonquin expects to file the analysis on or before March 31, 2014.
4. Identify any sensitive paleontological resources either along the pipeline segments or at any of the aboveground facilities.	Section 6.5 “Paleontological Resources” has been added.
5. Revise Section 6.5.2 to include a description of the earthquakes in the area that have been related to the Ramapo Fault. Also, provide a more detailed evaluation of how earthquakes related to this fault could impact the proposed project facilities.	Sections 6.6.1 and 6.6.2 have been updated to provide a greater explanation of current understanding of the relationship between seismicity, the Ramapo fault, and crustal stresses.
<b><u>Resource Report 7 – Soils</u></b>	
1. Identify what soil characteristics were used to determine water erosion potential for those soils where K factors were not available.	This is addressed throughout Resource Report 7.
2. Table 7E-1 lists the MP associated with the NY LTANKS site <i>Benjamin Residence 1326 Lower Washington Street</i> along the Stony Point to Yorktown Take-up & Relay segment as MP 30. This pipeline segment is only 11.7 miles long. Rectify this apparent discrepancy.	See Appendix 7F, Table 7F-1. This apparent discrepancy has been resolved.
3. Section 7.3.6 states that the EDR report provides a detailed list of potentially contaminated sites within 1 mile of the pipeline centerline, but, only sites within 500 feet of the pipeline were reviewed for their potential to impact pipeline construction. However, in some cases, the set of tables provided in Appendix 7E list sites greater than 500 feet away. Use a consistent 500-foot impact assessment radius or explain	See Appendix 7F. EDR reports will be narrowed down to contain only sites within 500’.

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why sites greater than 500 feet from the pipeline centerline were included.	
<b>Resource Report 8 –Land Use, Recreation, and Aesthetics</b>	
1. The number of miles and percentages of land uses crossed in the text of Section 8.2.1 do not match those in Table 8.2-1. For example, the text indicates that 25.3 miles (46 percent) of open land would be crossed while Table 8.2-1 indicates 20.7 miles (41 percent) would be crossed. Also, it appears that the 2.3 miles associated with the Hudson River crossing are included in the numbers in the text because the total adds up to 36.7, but it is not included in Table 8.2-1. Clarify or explain these apparent discrepancies.	Section 8.2-1 and Table 8.2-1 have been updated to correct this discrepancy. The discrepancy was due to the omission of the Hudson River crossing numbers in the table.
2. Revise Table 8.2-2 to complete the leased or owned column for all the compressor stations currently left blank.	Table 8.2-2 in Section 8.2-2 has been completed.
3. Table 8.2-2 indicates that the workspace for the Cromwell Compressor Station is confined to Middlesex County. However, Table 8A-2 in Appendix 8A indicates the workspace is in both Hartford and Middlesex Counties. The site plan for this compressor station does not show the workspace extending past the county line. Clarify or explain this apparent discrepancy.	Cromwell Compressor Station is located only in Middlesex County. The site plan is correct. Workspace is confined only in Middlesex County. Table 8A-2 in Appendix 8A has been corrected.
4. Section 8.3.1.1 indicates that pipeline construction in New York would result in temporary impacts on approximately 166.3 acres of open land and of this total, approximately 87 acres of open land consists of the existing permanent easement. However, Table 8A-1 in Appendix 8A indicates that these are the total acres for New York, not those just associated with open land. Clarify or explain this apparent discrepancy.	Table 8A-1 in Appendix 8A was correct. Section 8.3.1.1 has been updated to be consistent with Table 8A-1.
5. Provide the acreage by land use associated with operation of the project.	Operation land use acreages are included in Table 8A-1 under the “new perm” and “existing perm” columns and are described in the text within Section 8.3.1.1.
6. Describe the crops grown on the agricultural land affected by the project and whether any are considered specialty crops.	See Section 8.3.1.1 – Agricultural Land.

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7. Section 8.3.1.1 indicates that an additional 6.6 acres of agricultural land would be acquired as new permanent right-of-way. However, Table 8A-1 in Appendix 8A indicates it would be 3.0 acres. Clarify or explain this apparent discrepancy.	Table 8A-1 in Appendix 8A was correct. Section 8.3.1.1 has been updated to be consistent with Table 8A-1.
8. Update the land use impacts for all the M&R stations based on the current design.	Land use impacts in Section 8.3.1.2 for all M&R stations have been updated based on the current design.
9. In Section 8.3.1.2, it indicates that 3.3 acres of land outside the existing fence line at the Cortlandt M&R Station would be required during construction, including 0.2 acre of industrial/commercial land, 1.44 acres of open land, and 1.3 acres of forest/woodland land. However, this only adds up to 2.9 acres. Provide the land use for the remaining 0.4 acre.	Section 8.3.1.2, Cortlandt M&R Station numbers have been corrected.
10. In Section 8.3.1.2, it indicates that 11.6 acres of industrial land would be affected at the Burrillville Compressor Station. However, Table 8A-2 in Appendix 8A indicates that 10.6 acres of industrial land would be affected. Revise this apparent discrepancy.	Table 8A-2 is correct. Section 8.3.1.2 has been updated to correct the apparent discrepancy.
11. For those access roads requiring upgrades or improvements, provide the associated acreage of disturbance by land use type.	See Section 8.3.1.3 and Tables 8A-1 and 8A-2.
12. Confirm that each affected landowner has been notified of proposed private access road improvements and modifications, and describe any concerns they have expressed.	See Section 8.3.1.3.
13. Revise Table 8A-1 to provide a breakdown of the acreage associated with the temporary construction right-of-way versus additional temporary workspace for the pipeline facilities. The total acreage shown for the additional temporary workspace should match the total acreage obtained from Table 8.3-1.	Table 8A-1 in Appendix 8A has been revised to include the breakdown. The total acreage shown for the ATWS in Table 8A-1 matches the total acreage obtained from Table 8.3-1.
14. Resolve the discrepancy between the text in Section 8.3.1.6 and Table 8.3-2. The text says that there are 107 public road crossings and 4 railroad crossings; however, the table shows a total of 107 crossings, 103 roads and 4 railroads.	Section 8.3.1.6 and Table 8.3-2 have been revised accordingly.
15. Section 8.3.1.6 and Table 8.3-1 discuss road crossings. Clarify by differentiating road-crossing activities (bore, HDD, or open-cut) from in-road construction (open-cut to bury	Table 8.3-2 lists all roads being impacted by pipeline construction and differentiates road-crossing activities (e.g., proposed construction

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the pipeline longitudinally within the roadway), and list and discuss all roads being impacted by pipeline construction.	methods). As noted in Section 8.3.1.6, these construction methods are discussed in more detail in Section 1.5.1 of Resource Report 1.
16. Table 8D-1 lists a weigh station at MP 1.30 of the Southeast to MLV-19 Take-up & Relay segment as being in New York when it appears to be in Connecticut. In Section 8.3.2, that would then result in non-residential structure counts of 24 for NY and 8 for CT (rather than 25 and 7, respectively). Revise this apparent discrepancy.	Section 8.3.2 has been updated to correct the apparent discrepancy.
17. The count of structures within 50 feet on Table 8D-1 looks incomplete for the Southeast to MLV-19 Take-up & Relay segment. Specifically:	Table 8D-1 has been updated to reflect additional structures located within 50 feet.
a. No structures are identified between MPs 2.8 and 3.0 (alignment sheet SQ-A-1006), but it looks like there may be a structure within 50 feet on the south side of the right-of-way near approximately MP 2.9.	Table 8D-1 has been updated to reflect additional structures located within 50 feet.
b. The last structure identified for this segment is at MP 4.04. However, there appear to be more structures within 50 feet between MPs 4.04 and 4.4 (the end of the segment) (alignment sheet SQ-A-1009).	Table 8D-1 has been updated to reflect additional structures located within 50 feet between MP 4.04 to the end at MP 4.5.
18. Because of the high density of residences along the project area, site-specific plans will be required for all single or multifamily residential, condominium, or apartment building structures within 50 feet of the construction work area. Provide the plans to the owner of each residence and provide the owner a reasonable amount of time to review and comment on these plans. File these plans along with any comments from the property owner(s) and identify how Algonquin would keep residents informed of the progress of construction in the vicinity of their respective residences. Each site-specific residential plan needs to include:	For the residences within 50 feet of the construction workspace, Algonquin is developing individual Residential Construction Plans noting special construction techniques and mitigation measures. Algonquin will provide the plans to the owner of each residence at the end of March 2014 and will provide the owner a reasonable amount of time to review and comment on these plans. Algonquin intends to file the plans with the Secretary on or before April 30, 2014 along with any comments received from the property owner(s)
a. A dimensioned site plan at a legible scale that clearly shows:	See Response 18 above.
i. the location of the residence in relation to the new pipeline and any existing pipelines and/or other utilities;	See Response 18 above.
ii. the boundaries of all permanent and temporary construction work areas and distances from permanent structures;	See Response 18 above.
iii. other nearby structures, roads, waterbodies, and residential features (including decks, pools, swings, fences, driveways, etc.); indicating what would be removed and any areas with restrictions after construction;	See Response 18 above.

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iv. the resources affected at each residence including the temporary or permanent removal of vegetation, visual screening, sidewalk, fencing or other landscaping; the temporary disturbance of driveway and loss of residential access; etc. (note that these effects can be listed separately for each area on a table);	See Response 18 above.
v. the specific measures to be used at each residence to maintain driveway and/or sidewalk access;	See Response 18 above.
vi. the location of topsoil and subsoil storage piles;	See Response 18 above.
vii. equipment travel lanes; and	See Response 18 above.
viii. safety fencing and other safety features.	See Response 18 above.
b. A detailed description of the construction techniques that would be used (e.g., reduced pipeline separation, centerline adjustment, use of stove-pipe or drag-section techniques, working over existing pipelines, pipeline crossover, bore, utility crossing, installing plating, etc.).	See Response 18 above.
c. An estimated amount of time required for construction.	See Response 18 above.
d. A description of restoration and revegetation measures and procedures for the property.	See Response 18 above.
e. Include MPs to correspond with the filed alignment sheets.	See Response 18 above.
<p>f. Include a legend to clarify specific features in each drawing.</p> <p>In addition, Algonquin should provide a detailed description of the measures it would implement to ensure the public safety during construction activities and minimize and mitigate impacts from dust, noise, and vibration.</p> <p>A representative sample of these plans should be provided for review and comment prior to the filing of Algonquin’s formal application with the FERC. A full set of the plans should be filed with the formal application or shortly thereafter so that they may be included in the draft environmental impact statement.</p>	See Response 18 above.



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19. Revise Table 8D-2 to consistently provide the location of every identified planned development relative to the project.	Table 8D-2 in Appendix 8D has been updated and is consistent information presented with regards to the location of every identified planned development relative to the AIM Project.
a. For those areas crossed, provide the beginning and ending MP and total length crossed.	Table 8D-2 in Appendix 8D provides the beginning and ending MP and total length crossed.
b. For those areas not directly crossed, provide the distance and direction from the nearest point along the construction work area.	Table 8D-2 in Appendix 8D provide the distance and direction from the nearest point along the construction work area for those areas not directly crossed.
c. Provide the planned construction/development timeframes for each area.	Table 8D-2 in Appendix 8D provide the planned construction/development timeframes for each area
d. Provide documentation of correspondence with the owners/developers of the planned areas.	Table 8D-2 in Appendix 8D provides documentation of correspondence with the owners/developers of the planned areas.
e. Describe efforts to minimize any conflicts associated with the proposed Project.	Table 8D-2 in Appendix 8D describes efforts to minimize any conflicts associated with the proposed Project for any potentially affected planned construction/development areas.
20. Provide an update and documentation of correspondence regarding discussions with West Point Partners associated with its proposal to construct an AC/DC converter station on property currently owned by Con Edison in the Hamlet of Verplanck as part of a new electric transmission line project. Describe potential conflicts with Algonquin’s potential use of the site during construction across the Hudson River.	See Table 8D-2 in Appendix 8D and the footnote.
21. Revise Table 8.4-1 to include the New York Critical Environmental Areas crossed by the project and the recreational property in the Town of Lebanon crossed by the E-1 System at MP 2.79. In the text of Section 8.4.3, provide a description of the protected open space identified in Table 8.4-1 along the E-1 System Take-up & Relay segment and near the Farmington M&R Station. Also, for each of the areas identified in the table and text, consistently provide the following information.	Table 8.4-1 and Section 8.43 have been updated to consistently provide the requested information.
a. For those areas crossed, list the owner's name, beginning and ending MP, total length crossed, estimated area (acreage) to be affected, and any significant features or structures on the property that would be impacted.	Table 8.4-1 and Section 8.43 have been updated to consistently provide the requested information.



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b. For those areas not directly crossed, provide the distance and direction from the nearest point along the construction work area.	Table 8.4-1 and Section 8.43 have been updated to consistently provide the requested information.
c. Summarize for each area any consultations that have occurred with, and any specific concerns that have been identified by, the owners or managers of these properties.	Table 8.4-1 and Section 8.43 have been updated to consistently provide the requested information.
d. Summarize for each area any deed restrictions that limit certain types of activities on these properties, the nature of each restriction, and the process required to obtain a pipeline easement through these areas.	See Section 8.4.
e. Describe the specific mitigation measures that would be implemented to minimize impacts on these areas.	See Mitigations Measures in Section 8.3.1.1.
22. Provide a map showing the coastal zone area crossed in New York and per minimum filing requirements, provide a coastal zone consistency determination or evidence that a request for a consistency determination has been filed with the New York State Coastal Management Program ((§380.12(j)(4 & 7)).	See Section 8.4.6. A New York coastal zone boundary map is provided in Appendix 8F of Resource Report 8. Algonquin has filed its consistency statement with the NYSDOS concurrently with this Application. A copy is being filed with the Secretary contemporaneously with the application filing.
23. Indicate whether Algonquin plans to develop and implement an environmental complaint resolution procedure and if so, describe what the procedures would include and how they would be implemented.	Algonquin has developed an environmental complaint resolution procedure plan procedure to address landowner calls and letters during construction. This plan addresses the procedures Algonquin would take and how they would be implemented ( <i>see</i> Appendix 8E in Resource Report 8).
24. Section 8.6 indicates that Algonquin would attempt to leave trees in place along Oakland Heights Road as screening between the new Oakland Heights M&R Station and the residences. If the trees need to be removed, describe alternative measures (e.g., replanting new trees) that Algonquin would implement to minimize visual impacts on the nearby residences.	See Section 8.6.
25. Section 8.6 states that there would be no visual impacts at the site of the Assonet M&R Station because the new building would be consistent with the existing land uses of and at this site. Provide additional details on how the new building would be consistent with the existing land uses.	See Section 8.6.

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<b><u>Resource Report 9 – Air Quality and Noise</u></b>	
1. Existing conditions in Section 9.2.4 should be considered and revised to reflect all facilities of the project (particularly Section 9.2.4.4), not just the compressor station facilities.	Section 9.2.4 has been revised to reflect all proposed facilities.
2. Provide copies of all federal, state, and local air permit applications (construction and/or operation) applicable to the project, including, if necessary, applications for emission-generating sources at M&R stations. Include detailed emission calculations (pounds per hour and tons per year) for all criteria pollutants, greenhouse gas (GHG) emissions, and hazardous air pollutants (HAPs). If applicable, also provide any air quality modeling reports.	Copies of the air permit applications and any associated modeling reports for the compressor stations are provided in Appendix 9A.  Detailed emissions calculations are included in the permit applications and are summarized in Section 9.2.6.2, Tables 9.2-8 through 9.2-12.  The need for air permit applications for Project M&R stations is addressed in Section 9.2.5.1 and 9.2.5.2.
3. If air quality modeling is not required by federal, state, or local air permitting, provide a screening-level modeling analysis (e.g., AERSCREEN) to demonstrate compliance with National Ambient Air Quality Standards or State Ambient Air Quality Standards at all stations where additional compression is proposed.	The requested supplemental air quality analyses are provided in Appendix 9C.
4. Provide an estimate of construction emissions (criteria pollutants, GHG emission, and HAPs) and comparison to General Conformity thresholds, broken down per air quality control region. If project construction emissions exceed General Conformity de minimis thresholds, describe how the project would demonstrate conformity in accord with General Conformity regulations.	Detailed construction emissions are provided in Appendix 9D and summarized in Section 9.2.6.5, Tables 9.2-15 through 9.2-19.  A General Conformity Analysis with comparisons of relevant Project emissions with General Conformity de minimis thresholds is provided in Appendix 9B. The Project does not exceed the thresholds.
5. Provide estimated annual emissions from vented gases.	Estimated emissions of vented gases at compressor stations (i.e., gas releases) are provided in Tables 9.2-8 through 9.2-12 and in the air permit applications in Appendix 9A.  Estimated emissions of vented gases at from Project M&R stations and the new/replacement pipeline are provided in Table 9.2-13 and 9.2-14, respectively.
6. Provide noise survey reports for all compressor station sites, M&R stations, and HDD entrance and exit points. Include existing noise data (station operating at full load if an existing station), a plot plan, maps identifying the closest NSAs, detailed noise	The requested noise survey reports, acoustical analyses and comparison with applicable noise standards are provided in Appendices 9F, 9G and

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calculations estimating the future noise at the new or expanded station, and proposed noise control equipment. Include a comparison to the FERC’s noise standard and any applicable local noise ordinances.	9H, and are summarized in Section 9.3.3.  Applicable noise standards are discussed in Section 9.3.2.
7. Provide construction equipment noise estimates including duration of noise generating activities and a comparison to any noise standards applicable to construction noise.	Construction equipment noise estimates are provided in Section 9.3.4.2 and Table 9.3-12.  Applicable noise standards identified to date are discussed in Section 9.3.2.
8. Consult with municipalities in Rhode Island to identify any local noise ordinances applicable to the project. Include a summary of these ordinances and comparison of project noise emissions to the applicable standards.	See Section 9.3.2.2.
<b><u>Resource Report 10 - Alternatives</u></b>	
1. Provide additional details and discussion to explain how the locations of the proposed lift and relay and loop segments were identified and any alternative locations that were considered. Explain why the current locations are more feasible and operationally preferable.	Section 10.4.
2. Provide a table that compares the West Roxbury Lateral Alternative route to the corresponding segment of the currently proposed alignment. The table should include the following:	See Section 10.5.1 for a discussion on the comparison of the West Roxbury Lateral Alternative route to the corresponding segment of the proposed alignment.
a. total length (miles);	
b. number of residences within both 50 and 100 feet of pipeline route;	
c. impacts on wetlands (feet);	
d. number of waterbodies crossed;	

ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
DOCKET NOS. PF13-16-000 AND CP14-\_\_-000



**EXHIBIT Z-4**  
**RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS**  
**ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
e. number of road crossings;	
f. number of railroad crossings; and	
g. length of in-street construction (miles).	
3. Provide a similar analysis for an alternative route to the southern portion of West Roxbury Lateral that would be collocated with Route 1 and the Boston Providence Highway rather than following Rustcraft Road and Elm Street.	See Section 10.5.2 for a discussion on the comparison of the West Roxbury Lateral South End Alternative route to the corresponding segment of the proposed alignment.
4. In its October 29, 2013 Response to Scoping Comments, Algonquin indicates that it is continuing to investigate and evaluate viable route variations for the West Roxbury Lateral. Provide an update on these evaluations and an analysis of identified variations that would reduce impacts along various portions of the route (e.g., around the Legacy Place Shopping Center).	See Section 10.6.
5. Provide a feasibility assessment for the proposed and alternative alignments for the HDD of the Hudson River when the geotechnical investigations in the Hudson River Study Area are completed. Provide a comparison table for all of the alternative routes considered that includes the criteria listed in question 10-1. In addition, provide a discussion regarding potential impacts each alternative route would have on the Indian Point Energy Center.	See Section 10.5.3 for a discussion on the Hudson River Alternative alignments.
6. Provide a detailed discussion and mapping of the alternative sites that were examined for each of the new M&R stations (i.e., Oakland Heights, Assonet, and West Roxbury). The discussion should identify specific engineering or environmental reasons why each alternative was not chosen.	See Section 10.7.
7. Discuss the feasibility of installing electric driven compressor units instead of natural gas driven units at each of the modified compressor stations.	See Section 10.4.
<b><u>Resource Report 11 – Reliability and Safety</u></b>	
1. Describe any additional safety measures that would be implemented near high-voltage	See Section 11.4.2

**ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
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RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS  
ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
transmission lines. Indicate if an additional grounding system would be installed for this project.	
2. In its October 29, 2013 Response to Scoping Comments, Algonquin indicates that either remote shutoff or auto shutoff equipment would be installed at newly installed valve sites. Resource Report 11 appears to only discuss remote shutoff valves. Explain whether or not auto shutoff valves would be installed and if so, where.	See Section 11.4.3.2
3. Provide the class locations and high consequence areas (HCAs), by milepost, associated with the West Roxbury Lateral.	See Section 11.2.1.3, Table 11-2.
4. The note in Table 11.2 states that the HCA designations are based on the existing Algonquin pipeline facilities. Verify that the HCA designations for the project facilities are current based on the most recent annual review of HCA's as defined in Spectra's Integrity Management System.	See Section 11.2.1.3, Table 11-2.
5. Section 11.2.1.2 states that the proposed project facilities would be designed, constructed, operated, and maintained to meet or exceed U.S. Department of Transportation Minimum Federal Safety Standards set forth in Part 192. Provide an explanation of the additional measures that would be implemented to exceed the requirements of 49 Code of Federal Regulations Part 192. Also identify the specific areas or locations where the exceeded measures would apply.	See Section 11.2.1.2
6. Section 11.2.1.3 states that Algonquin would treat the entire pipeline route as if it was an HCA. Further clarify what Class design specifications Algonquin intends to construct to for all areas of the Project.	See Section 11.2.1.3
7. Address the concerns identified in Entergy's October 14, 2013 letter to the FERC regarding the Indian Point Energy Center. Include a discussion of the specific regulations applicable at the site.	See Section 10.5.3 of Resource Report 10
<b><u>Resource Report 12 – PCB Contamination</u></b>	
1. Describe the historical concentrations of polychlorinated biphenyls (PCBs) detected in the existing facilities that would be impacted by the Project. If no PCB sampling has	See Section 12.0.

ALGONQUIN GAS TRANSMISSION, LLC  
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**EXHIBIT Z-4**  
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FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
historically been completed at these existing facilities, use the closest sampling points to estimate the concentrations of PCB’s that may be encountered.	
<b><u>Other Agency Comments</u></b>	
1. Address the comments provided by the Connecticut Siting Council in the attached letter dated December 3, 2013.	See below.
<b><u>Connecticut Siting Council Comments:</u></b>	
1. Restrict vegetative clearing along the right-of-way to the months of November 1 to April 1 to reduce the impact to wildlife as much as possible;	<p>Algonquin’s policies concerning the re-growth of woody species are first and foremost designed to protect the safe operation of the pipeline. As part of its efforts to do so, Algonquin must facilitate access for maintenance and operations of the pipeline, including a mandatory patrol (aerial and foot) program to observe surface conditions on and adjacent to the right-of-way (“ROW”) for indications of leaks, construction activity, and other factors affecting safety and operation. In addition, Algonquin must maintain an adequate line of sight between pipeline markers.</p> <p>Consequently, in upland portions of the ROW, Algonquin maintains the permanent easement by conducting periodic clearing of woody vegetation along the entire width of the permanent easement on a cycle no less frequently than every 3 years. Routine vegetation maintenance clearing does not occur between April 15<sup>th</sup> and August 1<sup>st</sup> of any year to avoid impacting ground-nesting birds and other wildlife. This mowing timing restriction is consistent with the <i>FERC Upland Erosion Control, Revegetation and Maintenance Plan</i>. Because of the reasons noted above, Algonquin is not willing to extend the mowing restriction.</p>
2. Use of wood chips to serve as an erosion control measure along cleared portions of the temporary workspace locations and right-of-way after clearing is completed. No details were provided as to how erosion would be controlled between the initial clearing phase and pipe installation phase;	Algonquin has developed a detailed Erosion & Sedimentation Control Plan (“E&SCP”) that will be implemented for the AIM Project. The E&SCP details the erosion control methods that will be used.
3. Adoption of a five year cutting cycle for right-of-way maintenance after completion of the project to enhance production and the use of brushy habitats within the permanent	In Algonquin’s experience, it can become quite difficult to see the limits of the permanent ROW areas from both the air and the ground after a 3

**ALGONQUIN GAS TRANSMISSION, LLC  
Algonquin Incremental Market (“AIM”) Project  
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**EXHIBIT Z-4  
RESPONSE TO DECEMBER 17 AND 30, 2013 COMMENTS  
ON DRAFT RESOURCE REPORTS 1 THROUGH 12**

FERC DATA REQUEST	RESPONSE/LOCATION IN RESOURCE REPORTS
right-of-way;	year period. Moreover, the cleared area of the ROW provides a crucial visual cue to third parties, especially landowners, who may not otherwise realize that there is a natural gas pipeline or pipelines underground, on or in the vicinity of their property. In the absence of such visual cues, landowners are more likely to treat such areas as wooded areas and not recognize the need for caution. Finally, a 3 year maintenance cycle where mowing avoids the primary nesting periods for ground-nesting birds and other wildlife, provides an opportunity for sufficient cover for wildlife without jeopardizing the ability to observe and monitor the ROW. Algonquin does not see the need to modify its current mowing cycle.
4. Increase the blade height of right-of-way maintenance mowers to a minimum of six inches above grade to increase survival rates of wildlife utilizing the right-of way; and	Algonquin agrees to modify the blade height of the mowers in areas that support suitable habitat for wildlife.
5. Consideration of installing larger diameter piping to accommodate future regional growth and reasonable predicted future needs. Such installation would create longer term economic and environmental benefits, serving to benefit Connecticut’s current policy of substantially increasing the penetration of natural gas into local markets.	As reflected in the FERC certificate application, Algonquin is proposing to construct the AIM Project to increase its mainline pipeline capacity by 342,000 Dth/d to satisfy the transportation needs of the Project Shippers that sought Project capacity in the two open seasons held by Algonquin. Consistent with Commission policy, the AIM Project is appropriately designed based on the firm commitments Algonquin has received from these shippers. In response to the changing natural gas markets in the Northeast, Algonquin is frequently in contact with existing and potential shippers regarding various proposals to expand its pipeline facilities. Currently, however, Algonquin does not have any developed plans to expand its facilities along the Project route.

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-\_\_\_\_-000**

Notice



UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC

)

Docket No. CP14-\_\_\_\_-000

**ABBREVIATED APPLICATION OF  
ALGONQUIN GAS TRANSMISSION, LLC  
FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY  
AND FOR RELATED AUTHORIZATIONS**

( )

Take notice that on February 28, 2014, Algonquin Gas Transmission, LLC (~~Algonquin~~), 5400 Westheimer Court, Houston, Texas 77056, filed with the Federal Energy Regulatory Commission an application under Section 7(c) of the Natural Gas Act (~~NGA~~) for its proposed Algonquin Incremental Market (~~AIM~~) Project. Specifically, Algonquin requests: (i) authorization under NGA Sections 7(b) and 7(c) to construct, own, operate, and maintain 37.6 miles of take-up and relay, loop and lateral pipeline facilities and related facilities in New York, Connecticut, and Massachusetts, modify six existing compressor stations in New York, Connecticut and Rhode Island resulting in the addition of 81,620 horsepower of compression, modify 24 existing metering and regulating (~~M&R~~) Stations and construct three new M&R Stations, and abandon certain existing facilities; (ii) authorization for an initial incremental AIM Project recourse rate and related incremental fuel, and initial firm and interruptible recourse rates for service on the West Roxbury Lateral; and (iii) any waivers, authority, and further relief as may be necessary to implement the proposal contained in its application.

Algonquin requests that the Commission grant the requested authorizations and related approvals on or before January 31, 2015. Algonquin states that issuing an order by this date will help to ensure that the AIM Project is in service by November 1, 2016, in time to meet the transportation needs of the AIM Project shippers for the 2016-17 winter heating season.

The name, address, and telephone number of the person to whom correspondence and communications concerning this Application should be addressed is:

Berk Donaldson  
Director, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642  
Phone: (713) 627-4488  
Fax: (713) 627-5947

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 C.F.R. §§ 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant. On or before the comment date, it is not necessary to serve motions to intervene or protests on persons other than the Applicant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at <http://www.ferc.gov>, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: 5:00 pm Eastern Time on **[INSERT DATE]**.

Kimberly D. Bose  
Secretary

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC

Docket Nos. CP14-96-000  
PF13-16-000

NOTICE OF APPLICATION

(March 18, 2014)

Take notice that on February 28, 2014, Algonquin Gas Transmission, LLC (Algonquin), 5400 Westheimer Court, Houston, Texas 77056, filed in the above referenced docket an application pursuant to sections 7(b) and 7(c) of the Natural Gas Act (NGA) for the proposed Algonquin Incremental Market Project (AIM Project). Specifically, Algonquin requests authorization to: (i) construct, install, operate, and maintain approximately 37.6 miles of take-up and relay, loop, and lateral pipeline facilities, and appurtenances in New York, Connecticut, and Massachusetts; (ii) modify six existing compressor stations in New York, Connecticut, and Rhode Island, resulting in the addition of 81,620 horsepower (HP) of compression; (iii) modify 24 existing metering and regulating (M&R) stations and construct three new M&R stations; (iv) abandon certain existing facilities; and (v) approval of the pro forma tariff records to establish the incremental AIM Project firm transportation rate, an incremental fuel percentage applicable to service on the AIM Project, and the initial recourse rates for service on the West Roxbury Lateral (which is part of the proposed AIM Project, but has separate rate schedules). Algonquin states that the AIM Project will provide a total of 342,000 dekatherms per day of firm transportation service. Algonquin estimates the cost of the AIM Project to be approximately \$971,551,683, all as more fully set forth in the application which is on file with the Commission and open to public inspection. The filing is available for review at the Commission in the Public Reference Room or may be viewed on the Commission's website web at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or call toll-free, (886) 208-3676 or TYY, (202) 502-8659.

Any questions concerning this application may be directed to Berk Donaldson, Director, Rates and Certificates, Algonquin Gas Transmission, LLC, PO Box 1642, Houston, Texas 77251-1642, by telephone at (713) 627-4488 or by facsimile at (713) 627-5947.

On June 28, 2013, the Commission staff granted Algonquin's request to utilize the Pre-Filing Process and assigned Docket No. PF13-16-000 to staff activities involved in the AIM Project. Now, as of the filing of the February 28, 2014 application, the Pre-

Docket Nos. CP14-96-000  
PF13-16-000

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Filing Process for this project has ended. From this time forward, this proceeding will be conducted in Docket No. CP14-96-000, as noted in the caption of this Notice.

Pursuant to section 157.9 of the Commission's rules (18 CFR 157.9), within 90 days of this Notice, the Commission staff will either: complete its environmental assessment (EA) and place it into the Commission's public record (eLibrary) for this proceeding; or issue a Notice of Schedule for Environmental Review. If a Notice of Schedule for Environmental Review is issued, it will indicate, among other milestones, the anticipated date for the Commission staff's issuance of the final environmental impact statement (FEIS) or EA for this proposal. The filing of the EA in the Commission's public record for this proceeding or the issuance of a Notice of Schedule for Environmental Review will serve to notify federal and state agencies of the timing for the completion of all necessary reviews, and the subsequent need to complete all federal authorizations within 90 days of the date of issuance of the Commission staff's FEIS or EA.

There are two ways to become involved in the Commission's review of this project. First, any person wishing to obtain legal status by becoming a party to the proceedings for this project should, on or before the comment date stated below file with the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426, a motion to intervene in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) and the Regulations under the NGA (18 CFR 157.10). A person obtaining party status will be placed on the service list maintained by the Secretary of the Commission and will receive copies of all documents filed by the applicant and by all other parties. A party must submit seven copies of filings made in the proceeding with the Commission and must mail a copy to the applicant and to every other party. Only parties to the proceeding can ask for court review of Commission orders in the proceeding.

However, a person does not have to intervene in order to have comments considered. The second way to participate is by filing with the Secretary of the Commission, as soon as possible, an original and two copies of comments in support of or in opposition to this project. The Commission will consider these comments in determining the appropriate action to be taken, but the filing of a comment alone will not serve to make the filer a party to the proceeding. The Commission's rules require that persons filing comments in opposition to the project provide copies of their protests only to the party or parties directly involved in the protest.

Persons who wish to comment only on the environmental review of this project should submit an original and two copies of their comments to the Secretary of the Commission. Environmental commentators will be placed on the Commission's environmental mailing list, will receive copies of the environmental documents, and will be notified of meetings associated with the Commission's environmental review process.

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PF13-16-000

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Environmental commentors will not be required to serve copies of filed documents on all other parties. However, the non-party commentors will not receive copies of all documents filed by other parties or issued by the Commission (except for the mailing of environmental documents issued by the Commission) and will not have the right to seek court review of the Commission's final order.

The Commission strongly encourages electronic filings of comments, protests and interventions in lieu of paper using the “eFiling” link at <http://www.ferc.gov>. Persons unable to file electronically should submit an original and 7 copies of the protest or intervention to the Federal Energy regulatory Commission, 888 First Street, NE, Washington, DC 20426.

Comment Date: April 8, 2014.

Kimberly D. Bose  
Secretary

Document Content(s)

CP14-96-000 Algonquin Notice 031814.DOC.....1-3

**ALGONQUIN GAS TRANSMISSION, LLC**

5400 Westheimer Court  
Houston, TX 77056-5310

713.627.5400 main

**Mailing Address:**

P.O. Box 1642  
Houston, TX 77251-1642



March 31, 2014

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
Supplemental Information – Site Specific Crossing Plans for HDDs &  
West Roxbury Crushed Stone Blasting Assessment

Dear Ms. Bose:

On February 28, 2014, Algonquin Gas Transmission, LLC (“Algonquin”) filed its Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations (“Application”) with the Federal Energy Regulatory Commission (“Commission”) for its Algonquin Incremental Market Project. Algonquin hereby submits the site specific crossing plans for the Hudson River and the I-84/Still River horizontal directional drills referenced on page 2-33 of Resource Report 2 included in Exhibit F-I of the Application. Additionally, Algonquin hereby submits the West Roxbury Crushed Stone Quarry blasting impact assessment referenced on page 6-19 of Resource Report 6 included in Exhibit F-I of the Application. Algonquin also is attaching a table with estimated dates for the submission of the remaining updates and supplemental information to Exhibit F-1. Finally, Algonquin has attached an updated Exhibit J table which contains the status of other federal and state permits and consultations.

If you have any questions regarding this filing, please contact me at (713) 627-4488 or Chris Harvey, Manager, Rates and Certificates at (713) 627-5113.

Sincerely,

/s/ Berk Donaldson

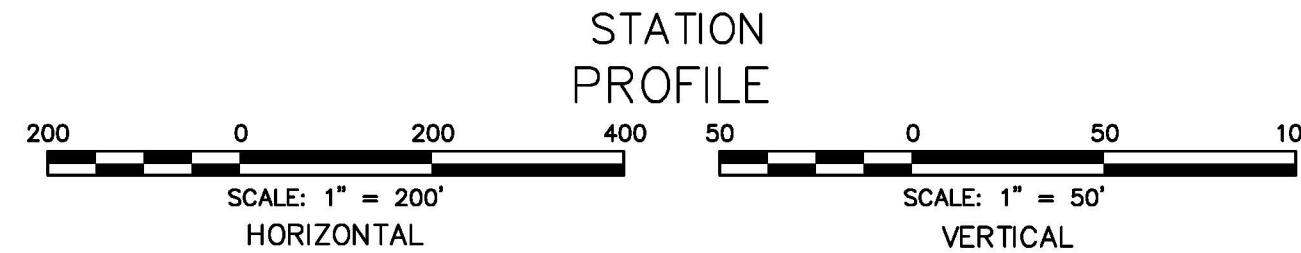
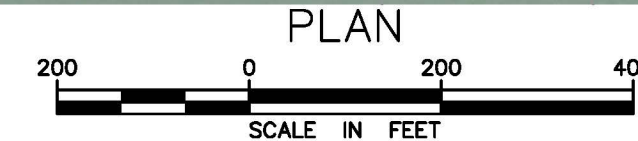
Berk Donaldson

Enclosures

cc: Doug Sipe (FERC)  
Maggie Suter (FERC)

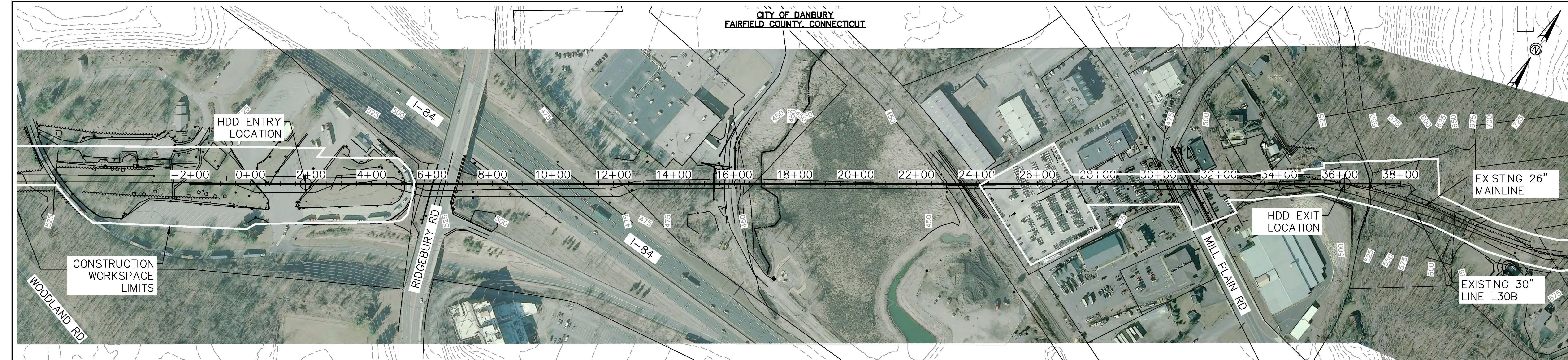


TOWN OF CORTLANDT  
WESTCHESTER COUNTY, NEW YORK

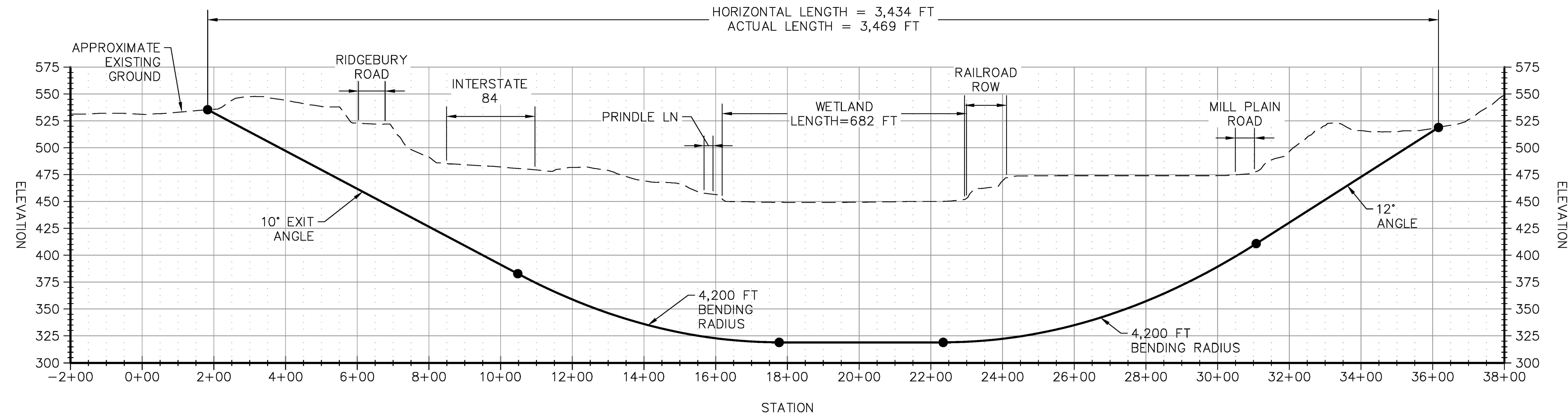


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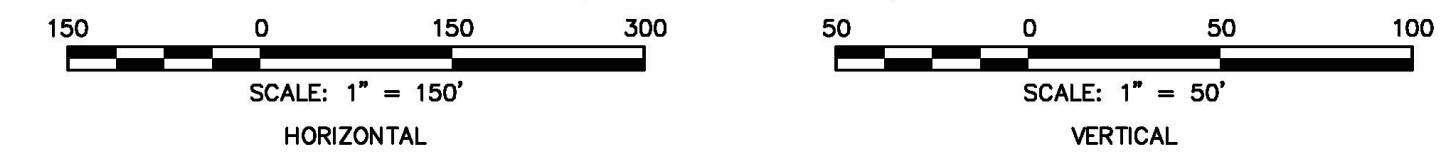




PLAN  
SCALE: 1"=150'



PROFILE



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# **ALGONQUIN INCREMENTAL MARKET PROJECT**

## **Analysis of the West Roxbury Crushed Stone Operations on Construction and Operation of the West Roxbury Lateral**

**March 31, 2014**



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**1.0 EXECUTIVE SUMMARY..... 1**

## 1.0 EXECUTIVE SUMMARY

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Algonquin Gas Transmission, LLC (“Algonquin”) has completed a comprehensive evaluation of: (1) the potential impacts on the West Roxbury Crushed Stone Quarry (“Quarry”) associated with the proposed AIM Project West Roxbury Lateral and meter and regulating (“M&R”) station; and (2) the potential impacts of Quarry operations on the construction and operation of the West Roxbury Lateral and M&R station.

With regard to the potential impact on the Quarry’s operations, Algonquin has discussed the anticipated schedule and logistics associated with constructing the West Roxbury Lateral and M&R station with the owners of the Quarry. No direct conflicts were identified that would inhibit the construction of the West Roxbury Lateral and M&R station or the continued day-to-day operation of the Quarry. Algonquin has committed to continue to consult with the Quarry owners to establish traffic management measures that will be implemented during construction. As was outlined in Resource Report 5 of Algonquin’s formal certificate application filed with the FERC on February 28, 2014, a detailed Traffic Management Plan is in development for the West Roxbury Lateral. Algonquin expects to file the Traffic Management Plan with the FERC on or before May 30, 2014. Once construction is complete, Algonquin does not anticipate any further impact on the Quarry from the operation and maintenance of the West Roxbury Lateral and M&R station.

In order to evaluate the potential impacts to the proposed pipeline and M&R station from the blasting operations at the Quarry, Algonquin retained the services of a local third-party geotechnical firm, GZA GeoEnvironmental, Inc. (“GZA”). Algonquin tasked GZA with analyzing the effects of current and potential future Quarry blasting operations. GZA’s report is provided in Attachment A. A description of the current operation as well as the limits of future Quarry expansion is included in the GZA report. In order to ensure that the report reflected a conservative approach in estimating possible impacts on Algonquin’s facilities, GZA assumed, hypothetically, that such future blasting within the Quarry would occur up to five feet from the Quarry property line along Grove Street, thereby minimizing the setback distance between Algonquin’s facilities and the Quarry’s blasting. The GZA report determined that the current or future blasting operations at the Quarry will not affect the safe operation and integrity of the pipeline or M&R station.

As described in detail in the report in Attachment A, studies have been performed and published discussing the resistance of buried pipelines to blast-induced vibrations. Calculations to evaluate the reserve strength within pipelines to resist the applied energy from blasts allow designers to analyze the site-specific and project-specific tolerance of a pipeline to stresses caused by vibrations. Assuming that hypothetical aggressive set of circumstances where the Quarry might extend its operation to within 5 feet of Grove Street, the GZA report determined that the proposed West Roxbury Lateral pipeline will be subject to vibrations well within pipeline design, with a minimum factor of safety of 10 to 20 times for the proposed gas pipeline. Thus, the GZA report concluded that ground vibrations from future blasting at the Quarry will not damage the proposed pipeline.

The proposed West Roxbury Lateral pipeline will be installed by specialized pipeline construction contractors using proven industry practices. The pipeline will be buried to a depth from the top of the pipe of at least 3 to 5 feet below existing ground surface and will consist of externally coated high strength steel with welded connections. The pipe will be installed within an excavation and enveloped in an engineered backfill consisting of either compacted sand or flowable fill (a low density concrete sand mixture) extending a minimum of 8 inches below the pipe, a minimum of 6 inches on both sides of the pipe and a minimum of 6 inches over the pipeline. This engineered backfill is designed to support the pipe evenly while maintaining the integrity of the pipe’s protective coating. The flowable fill layer will also provide a warning barrier to protect the pipe from third-party contractors.



The M&R station buildings will be engineered pre-fabricated pre-cast concrete structures designed for industrial use and will not contain large exterior glass windows, or finishes susceptible to cracking. The in-line tool receivers/launchers and the heaters will be above-grade, steel construction, and are not considered especially sensitive to vibrations. The M&R station facilities are all bolted onto foundations and well supported. The GZA report concluded that the components of the M&R station, which will be located further away from the Quarry than the pipeline in Grove Street, are not considered to be any more sensitive to vibration disturbance or damage than the below-grade pipeline and that ground vibrations from future blasting at the Quarry will not be disruptive or damaging to the M&R station.

After review, the GZA report states that based on the location of the proposed M&R station relative to the Quarry, the probability of a projectile stemming from a blast operation at the Quarry (*i.e.*, fly-rock) landing on the M&R station site is highly unlikely, potentially in the range of 10,000,000 to 1, with the probability of such a rock inflicting a direct strike on a segment of the limited amount of exposed pipe much lower still. Based on its analysis, the GZA report concludes that fly rock does not pose a concern for interruption of service or the release of natural gas at the M&R station.

Algonquin would also note that blasting in proximity to a natural gas pipeline is not an unusual occurrence along its pipeline system. Algonquin utilizes industry-wide recognized procedures for ensuring the safety and integrity of steel pipelines adjacent to blasting activity. The integrity of Algonquin's pipelines are therefore protected by well-established criteria on blasting vibrations, based upon extensive research by the Pipeline Research Committee International, blasting consultants, the United States Bureau of Mines, and through Algonquin's own direct observation of existing blasting operations near its existing in-service pipelines. Furthermore, Algonquin currently owns and operates a pipeline that runs through the active Riverdale Quarry near Pompton Lakes, New Jersey. In that location, Algonquin is notified prior to each blast and its facilities are then monitored during blasting operations to ensure that no harm is done to the safety and integrity of the pipeline. The same monitoring by Algonquin personnel will occur as necessary during blasting operations conducted by the West Roxbury Crushed Stone Quarry.



## **ATTACHMENT A**

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### **GZA GEOENVIRONMENTAL, INC. GEOTECHNICAL REVIEW OF QUARRY BLASTING**

GZA  
GeoEnvironmental, Inc.

Engineers and  
Scientists

## MEMORANDUM

**TO:** Michael Stellas, Spectra Energy Transmission, LLC

**FROM:** Gary R. McAllister, P.E.

**DATE:** March 28, 2014

**FILE NO.:** 09.025818.00

**RE:** Geotechnical Review of Quarry Blasting  
Proposed West Roxbury Lateral M&R Station and Pipeline  
Algonquin Incremental Market (AIM) Project  
Grove Street, West Roxbury, Massachusetts



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GZA GeoEnvironmental, Inc. (GZA) is pleased to submit this memorandum summarizing our review of the potential impacts of nearby blasting from an active quarry on the operation of the proposed West Roxbury Lateral metering and regulating (M&R) station and pipeline. This service was performed at the request of Spectra Energy Transmission, LLC on behalf of Algonquin Gas Transmission, LLC (Algonquin). References and sources used in preparation of this review are listed at the end of this memorandum. This memorandum was prepared with the assistance of Mr. James Cleveland, P.E., Mr. Bradford Roberts, P.E., and Mr. Andrew Blaisdell, and is subject to the Limitations in **Appendix A**.

To complete this scope of work, GZA completed the following steps:

- Background information describing the Quarry and the proposed M&R station and pipeline project was compiled. The results of the potential effects of the West Roxbury Crushed Stone Company (Quarry) and its operations on the M&R station and pipeline are summarized herein.
- Industry reference documents regarding quarry blasting and vibrations were researched. This is summarized and presented in **Appendix B**.
- Industry reference documents specific to protection of pipelines from blasting vibrations were researched. This is summarized and presented in **Appendix C**.
- The Quarry blast records over the last four years were reviewed. This is summarized and presented in **Appendix D**.
- The potential effects of blasting ground vibrations, if blasting is performed proximate to the proposed pipeline, were evaluated. This is summarized and presented in **Appendix E**.
- The potential effect of airborne rock (a.k.a., fly rock), if created from the blasting operations, on the above-ground portion of the M&R station were evaluated. This is summarized and presented in **Appendix F**.
- Based on the research, evaluations and review performed above, conclusions regarding the potential impacts of nearby blasting from the active Quarry on the operation of the proposed West Roxbury Lateral metering and regulating (M&R) station and pipeline were developed and summarized herein.

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## BACKGROUND

Algonquin is proposing the construction and operation of a new natural gas pipeline and M&R station on Grove Street in West Roxbury, Massachusetts. A quarry that actively performs rock blasting is also located on Grove Street. The blasting operations occur at the Quarry located at 10 Grove Street, West Roxbury, Massachusetts. The location of the Quarry and the proposed locations of the M&R station and pipeline are illustrated on **Figure 1**.



## QUARRY

The approximate area of the Quarry, as measured along the crest (top) of the Quarry excavation, is approximately 33 acres. According to the Quarry General Manager, the base of the Quarry is currently approximately 420 feet below the elevation of the Quarry entrance on Grove Street. Based on MassGIS elevation data (referencing North American Vertical Datum 1988), the base of the Quarry excavation would therefore be at approximately elevation -300 feet below mean sea level. The topography surrounding the Quarry to the east is approximately 40 feet higher than the Quarry entrance, resulting in a Quarry side slope as high as 460 feet on its east side. Aerial photography indicates that the Quarry side slopes are configured of varying slope angles with benches (plateaus) to facilitate working areas and to carry the vehicular access road to the base of the excavation.

The geologic setting in the area of the Quarry and proposed M&R station and pipeline is characterized by relatively shallow bedrock, which can be observed at the ground surface along the sides of Grove Street. The bedrock lithology is mapped as Dedham Granite within the Avalon terrain, a series of related rock formations (Mass GIS). Dedham Granite is a fine-grained to very coarse-grained, alkali-feldspar granite, granite, quartz-monzonite, and granodiorite which is pink, pink and light-green, and light gray in color (Kaye, 1980).

Since 2010, the Quarry blasting has been performed by A-1 Drilling & Blasting Company (A-1). According to A-1, blasting at the Quarry is performed under a permit issued by the City of Boston Fire Department, which specifies a limit on the allowable blast-induced vibration magnitude (e.g., amplitude or peak particle velocity, PPV) at any abutting property of 1.0 inch per second (ips).

## M&R STATION AND PIPELINE

Based on GZA's review of the project plans, and Spectra's standard construction specifications, the project is planned to consist of a 16-inch-diameter natural gas pipeline entering the south side of the M&R station, and a 24-inch-diameter natural gas pipeline exiting the north side of the M&R station. Both sections of the pipe are planned to be constructed within Grove Street, at a depth of approximately 5 feet below pavement grade. The pipeline will consist of high strength Grade X-52 steel with welded connections. The pipe will be installed within an excavation and be enveloped in an engineered backfill (e.g., compacted sand or cementitious fill (a.k.a., flowable fill)) extending a minimum of 8 inches below the pipe and minimum of 6 inches on both sides of the pipe. The engineered backfill is designed to support the pipe evenly, and protect the pipe's corrosion-protection coating.

The M&R station is planned to consist of two (2) internal inspection tool (pig) barrels (one launcher, one receiver), a metering building, two exterior gas heaters, a regulating building, and above-ground and underground gas pipelines. All above-ground components will be enclosed in a security fence. The two buildings will be engineered, single-level structures with minimum 4-inch thick reinforced concrete walls and 4- to 6-inch thick reinforced concrete roof. The exterior



above-ground structures, pipes, and supports will be steel construction. The buildings, pig barrels and heaters will be supported on concrete foundations.

The piping and associated facilities are required to undergo quality control and testing during manufacturing and construction. Algonquin's quality assurance / quality control includes having its inspectors at the manufacturing facilities and on-site during all welding, coating, and backfill operations. All welds for the pipeline are required to be tested (non-destructively) by a third-party radiographic inspection company. After construction is complete, and prior to being commissioned for service, the pipeline and its associated facilities are then hydrostatically tested to pressures at least 1.5 times the planned operating pressure for eight (8) hours.



#### RELATIVE PROXIMITY OF EXISTING AND PROPOSED STRUCTURES TO QUARRY

The proposed M&R station will be located on the opposite (west) side of Grove Street approximately across from the main entrance to the Quarry, as shown on **Figure 1**. The proposed M&R station property is approximately 2.5 acres in area, and situated at approximately elevation 120 feet. The proposed pipeline will be located beneath Grove Street, which ranges between approximately elevation 120 feet and 150 feet in the general area of the Quarry.

The future extent of the Quarry excavation is not known at this time. However, for the purpose of evaluating the potential effect on the proposed facilities, a scenario was developed and evaluated, which conservatively assumes that future rock blasting could theoretically occur adjacent to Grove Street, at the nearest location on the Quarry property to the proposed pipeline.

Other existing features considered in this evaluation included the existing underground utilities located within the Grove Street right-of-way. As shown of **Figure 2**, multiple underground utilities are currently located within the Grove Street right-of-way between the Quarry and the M&R Station. Two existing water lines and one existing gas line are located between the proposed natural gas pipeline and the Quarry. The closest of these three existing utilities to the Quarry is a 12-inch-diameter water line, which ranges in distance between approximately 10 and 20 feet from the Quarry property line.

#### POTENTIAL EFFECTS OF QUARRY BLASTING ON THE M&R STATION AND PIPELINE

In general, the potentially negative effects of Quarry blasting to surrounding receptors (i.e., structures, humans, natural resources, etc.) include ground vibrations, air vibrations, hydro-geologic disturbance, and projectiles (e.g., fly rock). Air vibrations (i.e., noise or overpressure) at higher frequencies can be audibly disturbing to humans and animals, and at lower frequencies can cause rattling of walls and windows. These conditions can be a nuisance to the building occupants; however, audible disturbance is not anticipated to pose an operational concern to the proposed M&R station or pipeline. Hydro-geologic disturbance (i.e., changes in rock fracture and joint opening size and chemical/sediment content) can change water supply well yield and quality; however, the M&R station will not have an on-site water supply well.

The various structural components of the proposed M&R Station will be constructed of reinforced concrete and steel. These components are not considered more sensitive to blast-related ground vibrations than the underground piping. The proposed pipeline is closer to the Quarry than the M&R Station. Therefore, the focus of this analysis is toward the potential for ground vibrations to impact the proposed underground natural gas pipeline. The underground natural gas pipeline will be constructed approximately 5 feet below grade, and as such the discussion of fly rock is limited to the potential effects on the above-ground components of the

project. The subject of ground vibrations is discussed and presented in **Appendices B through E**. The subject of fly rock is presented in **Appendix F**.

## CONCLUSIONS

Based on our evaluations, which are presented in **Appendices B through F**, we have concluded the following:



- The vibration peak particle velocity (PPV) limit promulgated by the City of Boston under the current blasting permit at the Quarry is 1.0 ips, and is considered conservative in the protection of residential buildings.
- Underground pipelines are significantly more tolerable to vibrations than residential buildings, and at a minimum, the proposed gas pipeline can tolerate a vibration PPV of 12 ips.
- Vibrations recorded during the last four years of Quarry blasting were observed to correlate well with calculated vibration levels.
- From the blast data, we have derived site-specific scaling relations with statistical basis to obtain the relationship between PPV and blast energy.
- Quarry blasting is required by regulation to consider the protection of residences, as well as all utilities. Several utilities currently exist beneath Grove Street including a water line, which is located closer to the Quarry property than the proposed gas pipeline.
- The existing water line is closer in proximity to the Quarry than the proposed natural gas pipeline, and represents the nearest receptor to the blast for vibrations. A theoretical scenario of blasting within 5 feet of the Grove Street right-of-way would result in PPV levels 33% to 67% higher at the existing water line than at the proposed gas pipeline.
- Under this theoretical scenario and assuming a conservative set of circumstances, the vibrations at the proposed natural gas pipeline would be 1.2 ips. The resulting PPV of 1.2 ips is equal to 1/10<sup>th</sup> of the proposed gas pipeline's tolerable PPV of 12 ips, resulting in a factor of safety of 10. Other potential scenarios were considered, and would result in factors of safety of greater than 10. Ground vibrations from future blasting at the Quarry are therefore not anticipated to be disruptive or damaging to the proposed pipeline and M&R station.
- Fly rock was reported to have landed on property located on Centre Lane to the north of the Quarry in 2009. Due to the location of the proposed M&R station relative to the Quarry, and changes to the blasting operations as a result of the 2009 incident, fly-rock is not anticipated to land on the M&R station parcel. However, an analysis was made to evaluate the potential effects of a similar rock fragment striking the proposed above-ground portions of the M&R Station. Based on this analysis, a fly rock scenario similar to that reported in 2009 would potentially result in minor chipping of the concrete building exterior and minor denting of the exposed pipe resulting in some repair. However the fly rock does not pose a concern for interruption to service or release of natural gas.
- Based on our evaluation, the nearby Quarry blasting is not anticipated to have a significant negative impact on the operation of the proposed West Roxbury Lateral metering and regulating (M&R) station and pipeline.

**APPENDIX A – LIMITATIONS**Use of Report

1. GZA GeoEnvironmental, Inc. (GZA) prepared this report on behalf of, and for the exclusive use of our Client for the stated purpose(s) and location(s) identified in the Proposal for Services and/or Report. Use of this report, in whole or in part, at other locations, or for other purposes, may lead to inappropriate conclusions; and we do not accept any responsibility for the consequences of such use(s). Further, reliance by any party not expressly identified in the agreement, for any use, without our prior written permission, shall be at that party's sole risk, and without any liability to GZA.

Standard of Care

2. GZA's findings and conclusions are based on the work conducted as part of the Scope of Services set forth in GZA's Proposal for Services and/or Report, and reflect our professional judgment. These findings and conclusions must be considered not as scientific or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work. If conditions other than those described in this report are found at the subject location(s), or the design has been altered in any way, GZA shall be so notified and afforded the opportunity to revise the report, as appropriate, to reflect the unanticipated changed conditions.
3. GZA's services were performed using the degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. No warranty, expressed or implied, is made.

Subsurface Conditions

4. The generalized soil profile(s) provided in our Report are based on widely-spaced subsurface explorations and are intended only to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and were based on our assessment of subsurface conditions. The composition of strata, and the transitions between strata, may be more variable and more complex than indicated. For more specific information on soil conditions at a specific location refer to the exploration logs.
5. In preparing this report, GZA relied on certain information provided by the Client, state and local officials, and other parties referenced therein which were made available to GZA at the time of our evaluation. GZA did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this evaluation.
6. Water level readings have been made in test holes (as described in the Report) at the specified times and under the stated conditions. These data have been reviewed and interpretations have been made in this Report. Fluctuations in the level of the groundwater however occur due to temporal or spatial variations in areal recharge rates, soil heterogeneities, the presence of subsurface utilities, and/or natural or artificially induced perturbations. The water table encountered in the course of the work may differ from that indicated in the Report.
7. GZA's services did not include an assessment of the presence of oil or hazardous materials at the property. Consequently, we did not consider the potential impacts (if any) that contaminants in soil or groundwater may have on construction activities, or the use of structures on the property.
8. Recommendations for foundation drainage, waterproofing, and moisture control address the conventional geotechnical engineering aspects of seepage control. These recommendations may not preclude an environment that allows the infestation of mold or other biological pollutants.



Compliance with Codes and Regulations

9. We used reasonable care in identifying and interpreting applicable codes and regulations. These codes and regulations are subject to various, and possibly contradictory, interpretations. Compliance with codes and regulations by other parties is beyond our control.

Cost Estimates

10. Unless otherwise stated, our cost estimates are only for comparative and general planning purposes. These estimates may involve approximate quantity evaluations. Note that these quantity estimates are not intended to be sufficiently accurate to develop construction bids, or to predict the actual cost of work addressed in this Report. Further, since we have no control over either when the work will take place or the labor and material costs required to plan and execute the anticipated work, our cost estimates were made by relying on our experience, the experience of others, and other sources of readily available information. Actual costs may vary over time and could be significantly more, or less, than stated in the Report.

Additional Services

11. GZA recommends that we be retained to provide services during any future: site observations, design, implementation activities, construction and/or property development/redevelopment. This will allow us the opportunity to: i) observe conditions and compliance with our design concepts and opinions; ii) allow for changes in the event that conditions are other than anticipated; iii) provide modifications to our design; and iv) assess the consequences of changes in technologies and/or regulations.

## APPENDIX B – QUARRY BLASTING AND VIBRATIONS

### DISCUSSION – BLAST-INDUCED VIBRATIONS



Ground vibrations and the effects on structures are well studied and documented based on extensive research of nuclear explosions and seismic events. These studies have identified the major types of ground vibrations, and their respective propagation and attenuation rates through and along the surfaces of soil and rock, and the effects of these vibrations at various magnitudes and frequencies on structures over long distances from the energy source. Rock blasting is typically comprised of a series of blasts separated by delays to split and pulverize the rock in a controlled manner. The resulting vibration from rock blasting and the distances the vibrations travel are a function of the individual blast energies per delay rather than the total blast energy. The resulting shear and compressive body waves and Raleigh surface waves created by quarry blasting travel shorter distances, and are not as easily distinguished and evaluated to the same degree as nuclear or seismic events. However, extensive observational data has been compiled, which provides guidance in predicting rock-blasting-induced vibrations as a function of explosive charge and distance from the blast (Dowding, 1996).

The resulting vibration intensity at any distance from a blast is generally a function of the blast energy per delay, radial distance from the blast, and site-specific subsurface conditions in the area. These variables affect how vibrations transmit, attenuate, and reflect to various degrees before reaching the location of concern. Rock-blasting-induced vibrations are therefore practically and commonly measured and evaluated simply on the basis of vibration magnitude (e.g., amplitude or peak particle velocity or PPV) measured in inches per second (ips), and dominant frequency measured in cycles per second (Hertz, Hz.). The monitoring equipment commonly used to measure the vibrations is a seismograph. For rock blasting, the seismograph instrument is typically capable and set up to be triggered by the vibrations, to record the vibration time history, and to report the “peak component” PPV and associated dominant frequency in the three principal directions (X, Y, and Z, or longitudinal, transverse, and vertical components).

The empirical relationships of observed building damage were established on the “peak component” PPV (Dowding, 1996) and therefore the “peak component” PPV reported in the seismograph reports are referenced herein when describing PPV. The peak “true vector sum” of the three component PPV levels can also be used to quantify vibration intensity; however, deriving the “true vector sum” can be a time-intensive and iterative exercise. The “maximum vector sum” is sometimes used for quantifying vibrations for regulatory purposes. The “maximum vector sum” combines the peak component PPVs for ease of use; however neglects that the peak component PPVs typically occur at different times on the vibration time history, and are therefore inaccurate and not recommended for use in evaluating vibrations.

Blast-induced PPV is typically controlled by designing the blast based on scaling relations relative to the nearest sensitive receptor(s), (i.e., typically buildings and/or utilities), and/or monitoring the vibrations during the blast at the receptor location(s). Scaling relations take into account the charge per delay and distance from the blast and degree of confidence in estimating the maximum PPV. In addition to the charge per delay and distance from the blast, vibration PPV induced by rock blasting can also be a function of a number of other components of the blast design (i.e., total charge, blast pattern, stemming depth, hole spacing, etc.), overburden, bedrock geology, and topography, all of which are unique to each blast. Accordingly, the site-specific scaling relationship can be evaluated using blast vibration data specific to each site, and the site-specific relationship is well-suited to predict PPV from future blasts at the same general location. This evaluation was performed as part of this study and the findings are presented in **Appendix D**.

Publications and industry guidelines present scaling relations, which in conjunction with the blaster's experience, provide a predictive methodology for determining the maximum charge per delay based upon the allowable PPV and distance to the sensitive receptor at each blast location (Hopler, 1998). The published scaling relations are based upon statistical analysis of thousands of recorded quarry blast vibrations. The scaling relation takes the form:



$$PPV = A (R/\sqrt{W})^B$$

Where:

PPV = Allowable peak particle velocity at the sensitive receptor (inches per second)

A = Variable based upon scaling relation referenced.

R = Radial distance between blast and sensitive receptor (feet)

W = Charge weight per delay (pounds)

B = Variable based upon scaling relation referenced.

The term  $(R/\sqrt{W})$  is known as the "scaled distance".

The variable A is a function of the site specific conditions, as well as the desired degree of confidence that the resulting PPV is equal to or below the calculated PPV. The upper bound value of "A" based on the last year of blast reports, is presented in **Appendix D**. The variable B is taken as -1.6 based on a majority of publications on the subject (Siskind, et al., 1980; Konya, 1991).

#### DISCUSSION – IMPLICATIONS OF GROUND VIBRATIONS

The level of vibration a receptor (e.g., building, structure, utility, etc.) can tolerate is a function of the PPV, frequency, and duration of the vibrations, along with the definition of "tolerable" for that receptor. The total duration of rock-blast-induced vibrations is typically not longer than one second, and the maximum peak PPV is often not repeated, such that duration is typically not considered in rock-blast-induced vibrations.

The U.S. Bureau of Mines (USBOM 8507) proposed vibration PPV levels relative to the protection of residential dwellings from coal mine blasting as a function of vibration frequency (Siskind, et al., 1980). The term "protection" refers to controlling the racking or shifting of a timber-framed residential building, based on observed cracking of concrete and interior and exterior finishes. The USBOM 8507 criteria do not address other types of buildings or above- and below-ground infrastructure. However, USBOM 8507 is widely accepted by practitioners and regulatory authorities as guidance for evaluating the magnitude of blast-induced vibrations for buildings in general (527 CMR 13).

*"Allowable limits of airblast and ground vibrations [USBOM 8507] are based, with a conservative factor of safety, upon extensive government, university, and engineering research which has established the amount and character of vibration so as to prevent damage and to insure the safety of the public and protection of property adjacent to the blast area." (527 CMR 13.09(a))*

The Office of Surface Mining (OSM) limit for residences near long-term, large-scale surface mine operations at distances of 300 to 5,000 feet (Hopler, 1998) is 1.0 ips, for any frequency. According to A-1 Drilling and Blasting, the Quarry's blasting operations are permitted by the City of Boston, with a PPV limit of 1.0 ips for any frequency similar to the OSM limit. This PPV limit of 1.0 ips is more restrictive than the USBOM 8507 limits within the majority range of

blast-induced frequencies. The USBOM 8507 (527 CMR 13) limits and the OSM (Quarry permit) limits are illustrated on **Figure D1**.

**Table B1** provides a compilation of vibration limits obtained from a variety of references to help illustrate the range of tolerances to vibrations by structures, materials, and humans (Bender, 2007).





**Table B1**

In order to provide some idea of what various PPV intensities represent, their effect on various structures and materials is contained in the following listing. These have been documented by researchers and organizations as referenced. Because of the many variables that could be encountered in the field, this listing should not be used to establish limits or be considered as the absolute point where the effect will always occur. To do so would also require consideration of frequencies. PPV units are inches per second.




PPV	Application	Effect	Reference
600	Explosive inside concrete	Mass blowout of concrete	j
375	Explosive inside concrete	Radial cracks develop in concrete	j
200	Explosive inside concrete	Spalling of loose/weathered concrete skin	j
> 100	Rock	Complete breakup of rock masses	a
100	Explosive inside concrete	Spalling of fresh grout	j
100	Explosive near concrete	No damage	l
50 - 150	Explosive near buried pipe	No damage	n
25 - 100	Rock	Tensile and some radial cracking	a
40	Mechanical equipment	Shafts misaligned	d
25	Explosive near buried pipe	No damage	o
25	Rock	Damage can occur in rock masses	c
10 - 25	Rock	Minor tensile slabbing	a
24	Rock	Rock fracturing	b
15	Cased drill holes	Horizontal offset	d
> 12	Rock	Rockfalls in underground tunnels	b
12	Rock	Rockfalls in unlined tunnels	g
< 10	Rock	No fracturing of intact rock	a
9.1	Residential structure	Serious cracking	b
8.0	Concrete blocks	Cracking in blocks	d
8.0	Plaster	Major cracking	h
7.6	Plaster	50% probability of major damage	g
7.0 - 8.0	Cased water wells	No adverse effect on well	m
> 7.0	Residential structure	Major damage possible	e
4.0 - 7.0	Residential structure	Minor damage possible	e
6.3	Residential structure	Plaster and masonry walls crack	b
5.44	Water wells	No change in well performance	k
5.4	Plaster	50% probability of minor damage	g
4.5	Plaster	Minor cracking	h
4.3	Residential structure	Fine cracks in plaster	b
> 4.0	Residential structure	Probable damage	f
2.0 - 4.0	Residential structure	Plaster cracking (cosmetic)	e
2.8 - 3.3	Plaster	Threshold of damage (from close-in blasts)	g
3.0	Plaster	Threshold of cosmetic cracking	h
1.2 - 3.0	Residential structure	Equals stress from daily environmental changes	i
2.8	Residential structure	No damage	b
2.0	Residential structure	Plaster can start to crack	d
2.0	Plaster	Safe level of vibration	g
< 2.0	Residential structure	No damage	e
< 2.0	Residential structure	No damage	f
0.9	Residential structure	Equivalent to nail driving	i
0.5	Mercury switch	Trips switch	d
0.5	Residential structure	Equivalent to door slam	i
0.1 - 0.5	Residential structure	Equates to normal daily family activity	i
0.3	Residential structure	Equivalent to jumping on the floor	i
0.03	Residential structure	Equivalent to walking on the floor	i



**Table B1 (cont.)**

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**APPENDIX C – VIBRATIONS AND PIPELINES**

The various structural components of the proposed M&R Station will be constructed of reinforced concrete and steel, and not considered more sensitive to blast-related ground vibrations than the underground piping. The proposed pipeline is approximately 100 feet closer to the Quarry than the M&R Station. Therefore, the focus of this analysis is toward the potential for ground vibrations to impact the proposed underground natural gas pipeline.

**PROPOSED PIPELINE**

The proposed pipeline will be installed according to Spectra standard details. We understand this includes a minimum of 6 inches of bedding material laterally between the piping and trench sidewalls and a minimum of 8 inches of bedding material between the piping and base of the trench. Bedding material beneath and around the pipe will consist of either sand or controlled density fill.

**EXISTING UTILITIES**

The proposed gas pipeline will be installed along Grove Street. Within the length of Grove Street that abuts the Quarry, the proposed gas pipeline will be located approximately 30 feet from the Quarry property line. There are multiple existing utilities beneath Grove Street, including a water main line and a sanitary sewer line, both of which are closer to the Quarry property line than the proposed gas pipeline in this area. The existing water line is closest to the Quarry, ranging between 5 and 20 feet away from the Quarry property line. The age, condition, depth, and material of the existing utilities are not known.

**PEAK PARTICLE VELOCITY AND VIBRATION IN PIPELINES**

Historically, pre-blast prediction and subsequent measurement of PPV has been the primary tool to predict and measure vibrations from a blast. The PPV can be easily measured by portable seismographs. Several references have been reviewed that correlate PPV to buried pipelines. The available references and corresponding PPV values are presented in the table below.

**Table C1**  
**Pipeline PPV Limits**

PPV (ips)	Application / Effect	Reference
50-150	Explosive near a buried pipe with no damage	Siskind, D.E. & Stagg, 1993 (Compiled in Bender, 2007)
25	Explosive near a buried pipe with no damage	Oriard, 1980 (Compiled in Bender, 2007)
>12-15	Predicted PPV of an explosive near buried pipe that resulted in no damage	Bender, 1981
12	Vibration limit of pipeline trench parallel to existing high-pressure gas lines	ISEE Handbook
10	Blasting 50' from buried pipe with no loss of pipe integrity	US Bureau of Mines (Siskind, 1994)
5-10	Any steel buried pipe under any conditions or use the calculations for allowable PPV based on the allowable stress of pipe	Pipeline Engineering Journal, 2009 pg. 260-262

### PIPE STRESSES AND VIBRATIONS



Studies have been performed and published describing the resistance of buried pipelines to blast-induced vibrations. These studies provide correlations between scaled distance with pipe bending and hoop stresses. The studies have concluded that pipe stresses are more accurately predicted based upon scaled distance than indirectly through PPV (Esparza, 1991). A scaled distance of 10, which corresponds to a PPV of 12.5 to 15 ips, has been considered conservative for buried pipelines.

Calculations to evaluate the reserve strength within pipelines to resist the applied energy from blasts allow designers to analyze site-specific and project-specific tolerance of a pipeline to stresses caused by vibrations. The project-specific variables include pipe properties (diameter, wall thickness, and yield strength), operating pressure, blasting energy, and the blast distance from the pipe. Based on the equation proposed by Esparza, 1981, the reserve strength within the 16-inch-diameter transmission gas pipeline operating at full pressure is 35,000 psi. This amount of reserve strength within the pipe can resist the stresses induced by ground vibrations in excess of 100 ips.

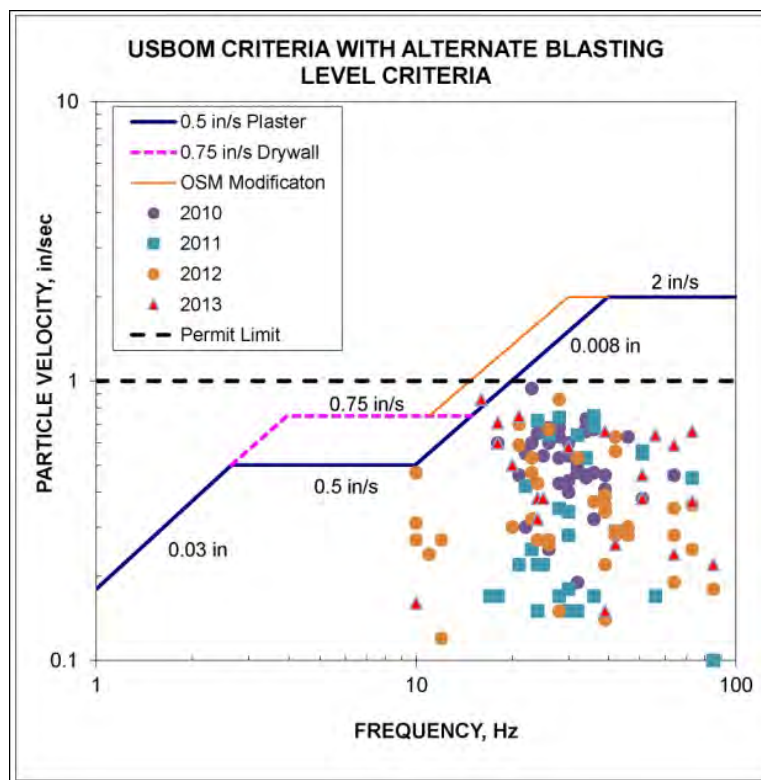
Based on the above references, and understanding the details of the pipe construction, installation, and operating pressure, we consider 12 ips to be a conservative PPV limit for the protection of the proposed West Roxbury Lateral pipeline.

**APPENDIX D – REVIEW OF QUARRY BLAST REPORTS**

As part of this study, GZA evaluated the historical documented blast designs and levels of blast-induced vibrations at the Quarry. GZA obtained 139 blast reports from the Quarry spanning March 10, 2010 through December 12, 2013. The blast reports describe the blast design details and vibrations recorded at nearby residential areas. Due to the amount of blast data, GZA reviewed of the 139 blast vibration results and more closely evaluated the most recent 12 months of blast reports, comprising 26 blasts.

**LAST FOUR YEARS OF BLAST DATA**

GZA reviewed the maximum vibration monitoring results of the 139 blasts performed between 2010 and 2013. GZA compared the maximum recorded PPV for each blast to the Quarry's permitted allowable peak particle velocity (PPV) limit of 1.0 ips and the U.S. Bureau of Mines suggested vibration limits for buildings (USBOM 8507). The reported PPV levels represent the maximum recorded PPV and associated frequency per blast. A-1 monitored the blast vibrations using a seismograph that recorded the vibration time history, peak component PPV, and associated frequency for each of the X, Y, and Z directions. These 139 peak component PPVs are shown below.

**Figure D1**

The maximum PPV of each of the 139 blasts spanning 2010 to 2013 fell within the permitted PPV limit of 1.0 ips. All but one of the 139 recorded peak PPVs were also within the USBOM 8507 criteria. The blast in question, Blast # 08-1, occurred June 26, 2013 and is among the blasts more closely reviewed in the followed paragraphs. This review suggests that the Quarry blasting vibrations have been effectively maintained within the permitted and limit over the last four years.

LAST 12 MONTHS OF BLAST DATA

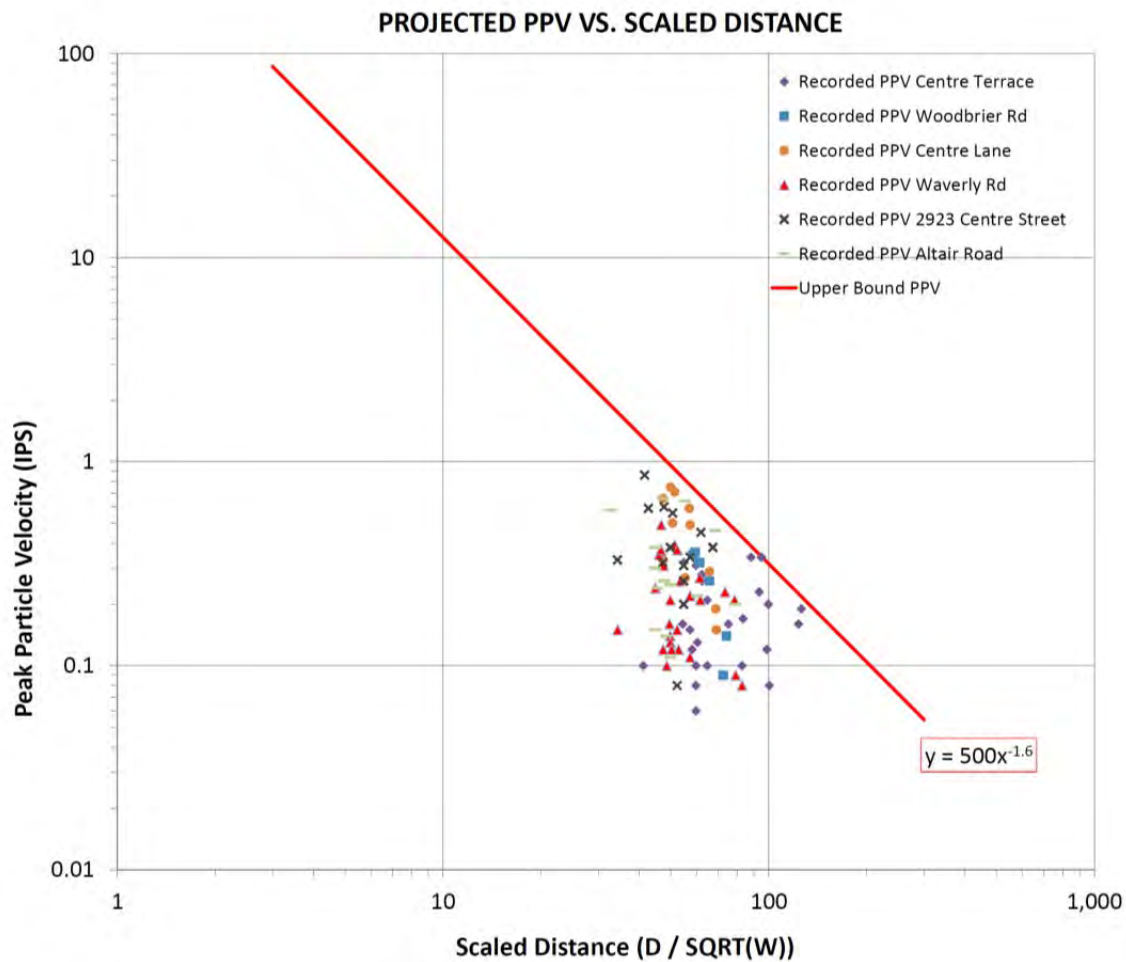
GZA evaluated the most recent 12 months of A-1's reports of the Quarry blasting and made the following observations:



- Blast 08-1 resulted in a recorded vibration of 0.86 ips at 16 Hz. This recorded vibration was within the permitted limit of 1.0 ips. Blast 08-1 was the only blast with a recorded maximum vibration level that exceeded the USBOM 8507 criteria of 0.84 ips for that frequency.
- A-1 calculated the scaled distance and maximum energy per delay for each blast based on the nearest residence to the blast. The scaled distances of the 26 blasts ranged between 32 and 70, averaging 49. It is our opinion that the scaling relations method in conjunction with vibration monitoring remains the generally accepted industry standard for predicting and controlling the magnitude of rock-blasting-induced vibrations.
- A site-specific scaled distance plot is presented below for all of the recorded PPV data in the last year. The red line represents the upper bound limit of PPV based on the measured data. The correlated A-value upper bound limit for the last 12 months of blast vibration results is 500.
- Review of the last 12 months of blast energies and respective measured PPVs and distances illustrate that the Quarry geology propagates and attenuates blast-induced vibrations consistent with the published "scaled distance" equations at other quarry operations.



Figure D2



**APPENDIX E – BLASTING PROXIMATE TO THE PROPOSED PIPELINE**

The portion of the proposed pipeline route closest to the Quarry is along a section of Grove Street shown on **Figure 2**. That portion of the Quarry is currently used as a haul road and stockpile area. For the purposes of this evaluation, we have considered a scenario that the Quarry will move the stockpile and haul road and blast along the property line abutting Grove Street. Under such a scenario, we further assumed that the blasting would take place as close as 5 feet from the property line in this area. This 5-foot setback is conservative in that it only leaves room to walk around the Quarry, and does not factor any regulatory setback requirements that may be imposed by the City of Boston, the Mine Safety and Health Administration, Occupational Safety and Health Administration, or other operational considerations by the Quarry operator (i.e., to maintain vehicular access to the rear of the Quarry property, etc.) any of which would likely require more than a 5-foot setback.

Assuming blasting did take place near Grove Street, the nearest sensitive receptor would be the existing water line. Massachusetts State Regulation 527 CMR 13.09(o) requires that prior to blasting in the vicinity of utility lines or rights-of-way, the blaster shall notify the appropriate utilities in advance of blasting, and obtain a Dig-Safe number. In doing so the blaster would find the water line markings in the road and be required under 527 CMR 13.09(k) to conduct a blast analysis. The blast analysis shall include all of the overall factors affecting the blasting operations, considering adjacent area structure(s), building(s), utilities, including gas and water supply lines within 250 feet of the center of the blast site and other underground objects that might be damaged by the effects of a blast.

Per 527 CMR 13, the blaster is required to maintain blast vibrations below the USBOM 8507 or 1.0 ips limits. This scenario assumes that the blaster based his blast design around a maximum allowable PPV of 2.0 ips (USBOM 8507 limits, above 40 Hz) at the water line:

**Location along Grove Street where the proposed gas pipeline would be closest to the Quarry (pipeline station 218+50).**

**Blast is designed using the scaled distance approach based on the nearest structure / utility (e.g., the existing water line)**

Distance from blast to water line: 25 feet

- Maximum allowable PPV at water line: 2.0 ips (assume using highest PPV limit on the USBOM 8507 curve, rather than the currently permitted PPV limit of 1.0 ips)
- Scaled distance for blast design: 31
- Maximum charge / delay: 0.66 Lb.

Resulting PPV at water line: 2.0 ips

Distance blast to the proposed gas pipeline: 35 feet

**Resulting upper bound PPV at the proposed gas pipeline: 1.2 ips**

Conservative upper bound PPV for the proposed West Roxbury gas pipeline = 12 ips (Refer to Appendix C).

**Minimum Factor of Safety for the proposed Gas Pipeline (12 / 1.2) = 10.**



If the water line is subject to the City of Boston permitted PPV limit of 1.0 ips, the resulting upper bound PPV at the proposed gas pipeline would be 0.6 ips, resulting in a minimum factor of safety of 20 for the proposed gas pipeline.

This scenario concludes that if future blasting occurs adjacent to Grove Street, the proposed gas pipeline will be subject to only nominal vibrations, with a conservative factor of safety of at least 10.



The water line is located approximately 20 feet from the Quarry property line along the stretch of Grove Street in the above scenario. The existing water line is closer to the Quarry property line and the proposed gas pipeline is further away from the property line at other locations along this stretch of Grove Street. Other theoretical blast scenarios at other locations near Grove Street would therefore conclude with lower ground vibrations being experienced at the proposed gas pipeline.

**APPENDIX F – POTENTIAL EFFECTS OF FLY ROCK TO THE PROPOSED M&R STATION**

The underground natural gas pipeline will be constructed approximately 5 feet below grade, and as such the discussion of fly rock is limited to the potential effects on the above-ground components of the project.

Blasting is fundamentally intended to split, pulverize and mobilize the rock mass in a controlled fashion. When performed properly, the resulting rock particles move horizontally, away from the rock face resulting in a stockpile at the base of the rock face. There is no benefit to the Quarry in spreading the blast rock over a large area, as this will result in a loss of rock and require greater effort collecting the blast rock for processing.

All of the rock faces of the Quarry point inward to the Quarry property. In the event that blast rock particles are projected beyond the intended collection area at the base of the rock face, the blast rock will still be contained within the Quarry. There are rare circumstances where blast rock will be projected in a steep angle. This is often caused by inadequate blast design and improper stemming. In such an instance, the resulting blast rock will still be primarily directed within the Quarry.

In the very rare event that blast rock is projected to the side or behind the rock face, the rock could theoretically leave the Quarry property. It is our understanding that such an event was reported in 2009 by the property owner of 19 Centre Lane (Ertischek, 2009). The property at 19 Centre Lane abuts the Quarry. Based on aerial photography and Mass GIS, the shared property line is located 200 feet from the nearest Quarry face. According to one news report, blasting was taking place in the northwest portion of the Quarry at the time. The article reported that the fly rock created imprints in the lawn and dislodged rocks from a landscape wall.

It is our understanding that immediately following this reported event, the Quarry implemented modifications in the blasting operations to reduce the potential for fly rock, and since incorporating these changes, fly rock has not been reported by abutters.

The M&R station is planned to consist of two (2) internal inspection tool (pig) barrels (one launcher, one receiver), a metering building, two exterior gas heaters, a regulating building, and above-ground and underground gas pipelines. All above-ground components will be enclosed in a security fence. The buildings will be engineered, single-level structures with minimum 4-inch thick reinforced concrete walls and 4- to 6-inch thick reinforced concrete roof. The exterior above-ground structures, pipes, and supports will be steel construction. The buildings, pig barrels and heaters will be supported on concrete foundations. All sensitive M&R Station piping, instruments and components will be located inside of the reinforced concrete buildings.

A fly rock scenario was evaluated at the proposed M&R station parcel with respect to the building and the exposed above-ground piping. Information produced by the U.S. Naval Ship Research and Development Center (CIRIA/UEG, 1989) provides the results of test missiles similar to the size, mass and velocity estimated from the 2009 reported fly rock event. The missiles were observed to cause chipping of less than 1 inch deep in the concrete face, with no damage to the back side of the concrete.

The same dynamic forces were used to evaluate the potential of above-ground piping to dent or puncture the exposed portions of the pipeline. Calculations based on the pipe diameter, thickness, and steel strength, indicate that a dent may be formed on the order of 2 inches in depth or less.

However, the pipe's resistance to puncture is over 10 times the applied force of the fly rock. (Fuglem, 2001).

Based on this analysis, a fly rock scenario similar to that reported in 2009, would potentially result in minor chipping of the concrete building exterior and minor denting of the exposed pipe resulting in some repair. However the fly rock does not pose a concern for interruption to service or release of natural gas.





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## GEOGRAPHIC INFORMATION SYSTEM (GIS) SOURCES

- <http://www.cityofboston.gov/maps/>, "City of Boston Parcel Data 2013"
- <http://www.cityofboston.gov/maps/>, "LiDAR: 2009 City of Boston"
- [http://maps.massgis.state.ma.us/map\\_ol/oliver.php](http://maps.massgis.state.ma.us/map_ol/oliver.php), "Bedrock Lithology, Group B Detailed"





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ALOGONQUIN INCREMENTAL MARKET (AIM) PROJECT  
PROPOSED M&R STATION AND PIPELINE  
WEST ROXBURY, MASSACHUSETTS

LOCATION OF ADJACENT WEST ROXBURY  
CRUSHED STONE (QUARRY)

PREPARED BY:  
 **GZA GeoEnvironmental, Inc.**  
Engineers and Scientists  
www.gza.com

PREPARED FOR:  
SPECTRA ENERGY TRANSMISSION

PROJ MGR: GRM  
DESIGNED BY: GRM  
DATE: 03/28/2014

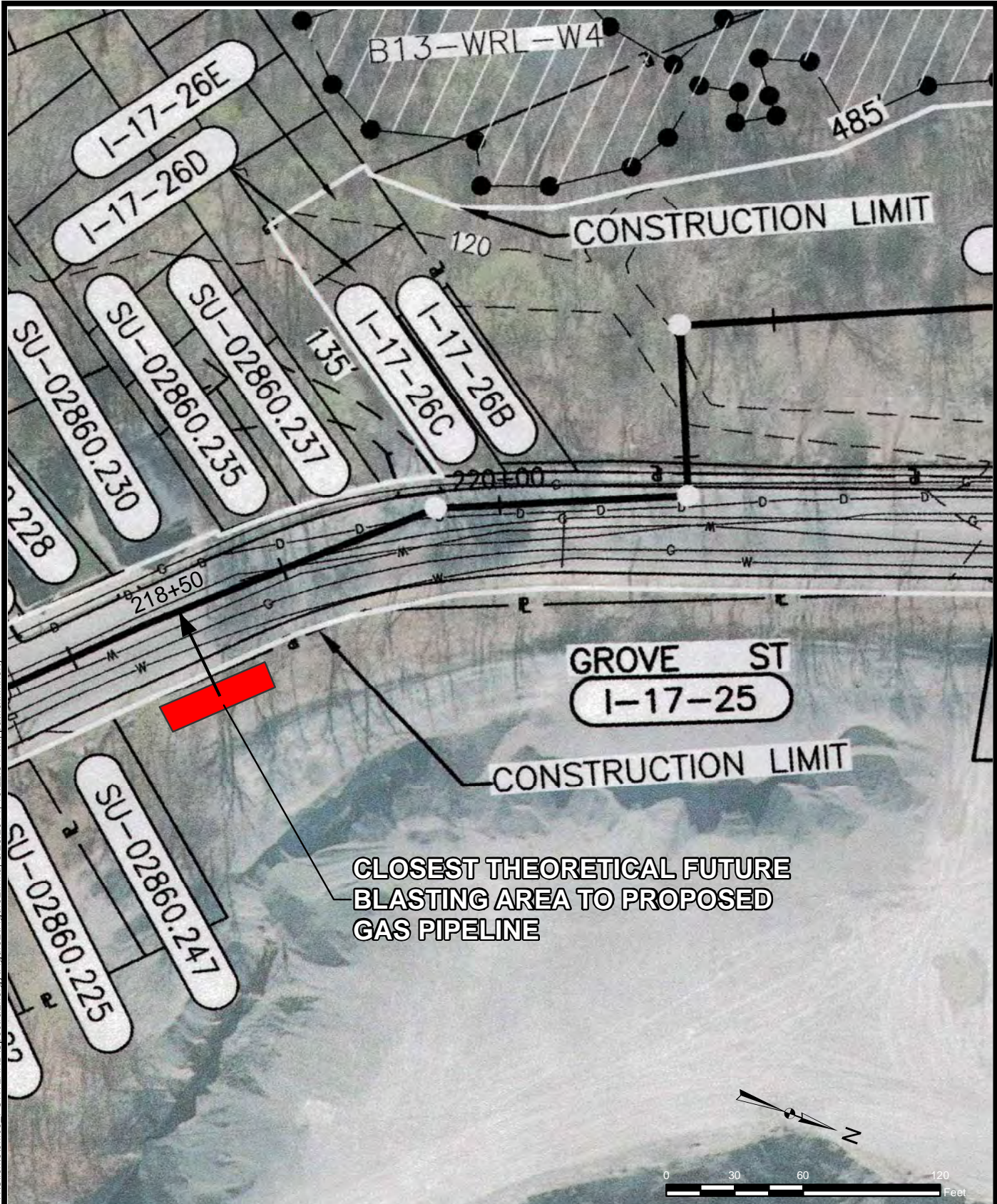
REVIEWED BY: GRM  
DRAWN BY: ADM  
PROJECT NO. 09.0025818.00

CHECKED BY: GRM  
SCALE: 1 in = 400 ft  
REVISION NO.

FIGURE  
1

J.A. 0416






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- NOTES:
- 1. IMAGE COURTESY OF (C) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS
  - 2. THIS SKETCH REFERENCES "CITY OF BOSTON PARCEL DATA, 2013" WWW.CITYOFBOSTON.GOV/MAPS AND APPROXIMATE PIPELINE ALIGNMENT PROVIDED BY SPECTRA ENERGY.
  - 3. THIS SKETCH AND THE FEATURES ADDED HEREON ARE CONSIDERED NOT TO SCALE.

ALGONQUIN INCREMENTAL MARKET (AIM) PROJECT  
PROPOSED M&R STATION AND PIPELINE  
WEST ROXBURY, MASSACHUSETTS

LOCATION OF ADJACENT WEST ROXBURY  
CRUSHED STONE (QUARRY)  
ALIGNMENT SHEET

PREPARED BY:  <b>GZA GeoEnvironmental, Inc.</b> Engineers and Scientists www.gza.com		PREPARED FOR: SPECTRA ENERGY TRANSMISSION	
PROJ MGR: GRM	REVIEWED BY: GRM	CHECKED BY: GRM	FIGURE 2
DESIGNED BY: GRM	DRAWN BY: PCF	SCALE: 1 in = 60 ft	
DATE: 03/28/2014	PROJECT NO. 09.0025818.00	REVISION NO.	

J.A. 0417

<b>ALGONQUIN INCREMENTAL MARKET PROJECT (“AIM”)</b> <b>FOLLOW-UP COMMITMENTS MADE IN APPLICATION CP14-96</b>		
<b><u>RESOURCE REPORT</u></b>	<b><u>COMMITMENT</u></b>	<b><u>STATUS / ANTICIPATED FILING DATE</u></b>
RR1	The results of the geotechnical surveys for the proposed HDDs, including the interpretation of the geotechnical information as it relates to the feasibility of each HDD and the potential challenges that may be associated with each proposed drill.	April 15, 2014
RR2	I-84/Still River and Hudson River HDD Site-Specific Crossing Plans	March 31, 2014
RR2	New York Stormwater Pollution Prevention Plan	April 25, 2104 (original estimate was March 31, 2014)
RR5	Traffic Management Plans for West Roxbury and New York pipeline segments	May 30, 2014
RR6	West Roxbury Crushed Stone – Blasting Impact Assessment	March 31, 2014
RR8	Updated Residential Site-Specific Plans	April 30, 2014
RR9	Noise reports Peekskill, Cortlandt and New Bedford M&Rs	April 14, 2014





**Exhibit J**  
**Federal and State Permits/Approvals and Consultations**  
**AIM Project – Updated March, 2014**

<b>Anticipated Environmental Permit, Review and Consultation List</b>			
<b>Agency</b>	<b>Permits and Consultations</b>	<b>Date Submitted / Anticipated Submittal Date</b>	<b>Date Received / Anticipated Receipt Date</b>
<b>FEDERAL</b>			
<b>Federal Energy Regulatory Commission (FERC)</b> o Office of Energy Projects (OEP)	<i>Required Permit:</i> o Certificate of Public Convenience and Necessity o National Environmental Policy Act (NEPA) – Environmental Impact Statement Review o Pipeline abandonment under Section 7(b) of the Natural Gas Act	Filed Formal FERC Application – February 28, 2014	Receive FERC Certificate – January 2015
<b>U.S. Army Corps of Engineers (USACE)</b> o New England District – Regulatory Division o New York District – Regulatory Division	<i>Required Permit:</i> o Section 10 Rivers and Harbors Act o Section 404 Clean Water Act (CWA)	NY - March 21, 2014 NE - March 25, 2014	1st Quarter 2015
<b>U.S. Environmental Protection Agency (USEPA)</b> o Region 1 (New England) o Region 2 (New York)	<i>Consultations:</i> o Wetland review during USACE Section 404 permit process o Consultation during NEPA review and oversight of air permits o Spill Prevention, Control and Countermeasures (SPCC) Plan o SIP Conformity	No USEPA approval required. Consultation through the USACE permitting process.	N/A
<b>National Marine Fisheries Service (NOAA Fisheries)</b> o Office of Protected Resources	<i>Consultations:</i> o Federal Endangered Species Act o Magnuson-Stevens Fishery Conservation and Management Act	Ongoing Consultation	N/A
<b>U.S. Fish and Wildlife Service (USFWS)</b> o New England Field Office o New York Field Office	<i>Consultations:</i> o Federal Endangered Species Act o Migratory Bird Treaty Act o Fish and Wildlife Coordination Act	Ongoing Consultation	N/A
<b>STATE OF NEW YORK</b>			
<b>New York State Department of Environmental Conservation (NYSDEC)</b> o Division of Environmental Permits o Bureau of Water Permits o Bureau of Habitat (Freshwater Wetlands Program)	<i>Required Permits:</i> o Section 401 Water Quality Certification (WQC) pursuant to Section 401 of the CWA o Freshwater Wetland Permit o State Pollution Discharge Elimination System (SPDES) Hydrostatic Test Water o Protection of Waters Permit o Construction Stormwater General Permit - Stormwater Pollution	April 2014	1 <sup>st</sup> Quarter 2015



Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
	Prevention Plan (SWPPP)		
<b>New York State Department of Environmental Conservation (NYSDEC)</b> <ul style="list-style-type: none"> <li>Division of Fish, Wildlife &amp; Marine Resources <ul style="list-style-type: none"> <li>Bureau of Wildlife and Fisheries</li> <li>New York Natural Heritage Program</li> </ul> </li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>State-listed threatened and endangered species consultations</li> </ul>	Ongoing Consultation	N/A
<b>New York State Department of Environmental Conservation (NYSDEC)</b> <ul style="list-style-type: none"> <li>Division of Air Resources</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Air Permits for Compressor Station Modifications</li> </ul>	February 2014	1 <sup>st</sup> Quarter 2015
<b>New York State Department of State</b> <ul style="list-style-type: none"> <li>Office of Communities &amp; Waterfronts</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>Coastal Zone Consistency Review</li> </ul>	February 2014	4 <sup>th</sup> Quarter 2014
<b>New York State Office of General Services</b> <ul style="list-style-type: none"> <li>Real Estate Development - Land Management</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>Application for Use of Land Underwater</li> </ul>	July 2014	1 <sup>st</sup> Quarter 2015
<b>New York State Office of Parks, Recreation &amp; Historic Preservation</b> <ul style="list-style-type: none"> <li>Historic Preservation Office – Environmental Review Program</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation regarding Section 106, National Historic Preservation Act</li> <li>Review and consultation regarding potential encroachment across state lands</li> </ul>	Ongoing Consultation	N/A
<b>New York City Department of Environmental Protection</b>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Stormwater Pollution Prevention Plan and erosion and sediment control</li> <li>Land Use Permit for Catskill Aqueduct crossing</li> </ul>	2 <sup>nd</sup> Quarter 2014	4 <sup>th</sup> Quarter 2014
<b>County of Westchester and County of Rockland, New York</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Consultation regarding encroachment across county lands</li> </ul>	Ongoing Consultation	N/A
<b>Municipal Agencies, New York</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Municipal wetland permits</li> <li>Other municipal requirements related to pipeline construction, including steep slope, erosion control, tree clearing, stream conservation and stormwater programs, air quality, impacts to agricultural districts</li> </ul>	Ongoing Consultation	N/A
<b>STATE OF CONNECTICUT</b>			
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Bureau of Water Protection and Land Reuse</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>401 Water Quality Certification</li> <li>Inland Wetlands and Watercourses</li> <li>Water Diversion Permit (Non-consumptive Use)</li> <li>General Permit for discharges of hydrostatic test water</li> <li>Stormwater and Dewatering Wastewaters from</li> </ul>	March 28, 2014	1 <sup>st</sup> Quarter 2015



Anticipated Environmental Permit, Review and Consultation List			
Agency	Permits and Consultations	Date Submitted / Anticipated Submittal Date	Date Received / Anticipated Receipt Date
	Construction		
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Bureau of Natural Resources <ul style="list-style-type: none"> <li>Wildlife Division - Natural Diversity Data Base</li> <li>Inland Fisheries</li> </ul> </li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>State-listed threatened and endangered species consultations</li> <li>Inland fisheries</li> </ul>	<i>Ongoing Consultation</i>	N/A
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Bureau of Air Management</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Air Permits for modifications to compressor stations</li> </ul>	<i>January 31, 2014</i>	<i>3<sup>rd</sup> Quarter 2015</i>
<b>Connecticut Department of Energy and Environmental Protection</b> <ul style="list-style-type: none"> <li>Connecticut Siting Council</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and certification of energy facilities through the FERC process</li> </ul>	<i>Ongoing consultation</i>	N/A
<b>Connecticut Department of Economic and Community Development</b> <b>Offices of Culture and Tourism</b> <b>Connecticut State Historic Preservation Office</b> <ul style="list-style-type: none"> <li>Connecticut Office of the State Archaeologist</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	<i>4<sup>th</sup> Quarter 2014</i>
<b>Connecticut Indian Affairs Council</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	<i>4<sup>th</sup> Quarter 2014</i>
<b>Connecticut Commission on Culture and Tourism</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and consultation under Section 106 of the National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	<i>4<sup>th</sup> Quarter 2014</i>
<b>Municipal Inland Wetlands and Watercourse Agencies</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Inland Wetlands and Watercourses</li> </ul>	<i>Ongoing Consultation</i>	N/A
<b>STATE OF RHODE ISLAND</b>			
<b>Rhode Island Department of Environmental Management</b> <ul style="list-style-type: none"> <li>Bureau of Environmental Protection</li> <li>Office of Water Resources</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Notice of Intent - Storm Water General Permit for Construction Activity</li> <li>RIPDES Waste Water Discharge Permit for Hydrostatic Test Water</li> </ul>	<i>2<sup>nd</sup> Quarter 2014</i>	<i>2<sup>nd</sup> Quarter 2015</i>
<b>Rhode Island Department of Environmental Management</b> <ul style="list-style-type: none"> <li>Bureau of Environmental Protection</li> <li>Office of Air Resources</li> </ul>	<i>Required Permits:</i> <ul style="list-style-type: none"> <li>Air Permit for Modifications to Burrillville Compressor Station</li> </ul>	<i>January 31, 2014</i>	<i>3<sup>rd</sup> Quarter 2015</i>
<b>Rhode Island Division of Planning and Development</b> <ul style="list-style-type: none"> <li>Natural Heritage Program</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Rhode Island Endangered Species or Animals and Plants</li> </ul>	<i>Consultation complete</i>	N/A
<b>Rhode Island Historical Preservation &amp; Heritage Commission</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review under Section 106 of the National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	<i>4<sup>th</sup> Quarter 2014</i>
<b>COMMONWEALTH OF MASSACHUSETTS</b>			
<b>Massachusetts Executive Office of Energy and Environmental Affairs</b> <ul style="list-style-type: none"> <li>MEPA Office</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>MEPA Certificate</li> </ul>	<i>Filed February 18, 2014</i>	<b>March 31, 2014</b> <b>No further MEPA review</b>



<b>Anticipated Environmental Permit, Review and Consultation List</b>			
<b>Agency</b>	<b>Permits and Consultations</b>	<b>Date Submitted / Anticipated Submittal Date</b>	<b>Date Received / Anticipated Receipt Date</b>
			<b>required.</b>
<ul style="list-style-type: none"> <li>Massachusetts Office of Coastal Zone Management (CZM)</li> </ul>	<i>Consistency Determination</i> <ul style="list-style-type: none"> <li>CZM Consistency (applies only to the Assonet M&amp;R Station and North Fall River M&amp;R Station improvements, which are at the same location)</li> </ul>	January 2014	<b>Received consistency determination February 6, 2014.</b>
<b>Massachusetts Department of Environmental Protection</b> <ul style="list-style-type: none"> <li>Northeast Regional Office</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>401 Water Quality Certification</li> </ul>	April 2014	1 <sup>st</sup> Quarter 2015
<b>Massachusetts Department of Transportation</b>	<i>MassDOT</i>	2 <sup>nd</sup> Quarter 2014	1 <sup>st</sup> Quarter 2015
<b>Massachusetts Energy Facilities Siting Board</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Review and comment on FERC-regulated energy projects</li> </ul>	N/A	N/A
<b>Massachusetts Division of Wildlife and Fisheries</b> <ul style="list-style-type: none"> <li>Natural Heritage &amp; Endangered Species Program</li> </ul>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Massachusetts Endangered Species Act (MESA)</li> </ul>	<i>Consultation complete</i>	N/A
<b>Massachusetts Historical Commission</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Commission on Indian Affairs</b>	<i>Consultation:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Wetlands Protection Act</b> <ul style="list-style-type: none"> <li>Permits from Local Municipal Conservation Commissions</li> </ul>	<i>Required Permit:</i> <ul style="list-style-type: none"> <li>Order of Conditions – Massachusetts Wetlands Protection Act</li> <li>Local Wetland Bylaws/Ordinances</li> </ul>	3 <sup>rd</sup> Quarter 2014	1 <sup>st</sup> Quarter 2015
<b>Municipal Historical Commissions</b>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Massachusetts Department of Conservation and Recreation</b>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>NATIVE AMERICAN GROUPS</b>			
<b>Federally Recognized</b> <ul style="list-style-type: none"> <li>Wampanoag Tribe of Gay Head (Aquinnah)</li> <li>Mashpee Wampanoag Indian Tribe</li> <li>Narragansett Indian Tribe</li> <li>Mohegan Indian Tribe</li> <li>Mashantucket Pequot Tribal Nation</li> <li>Delaware Nation of Oklahoma</li> <li>Delaware Tribe of Indians</li> <li>St. Regis Mohawk Tribe</li> <li>Stockbridge-Munsee Community Band of Mohican Indians</li> </ul>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014
<b>Non-Federally Recognized</b> <ul style="list-style-type: none"> <li>Ramapough Lenape Indian Nation</li> <li>Golden Hill Tribe of the Paugussett Indian Nation</li> </ul>	<i>Consultations:</i> <ul style="list-style-type: none"> <li>Section 106, National Historic Preservation Act (16 USC § 470f)</li> </ul>	<i>Ongoing consultation</i>	4 <sup>th</sup> Quarter 2014



Anticipated Environmental Permit, Review and Consultation List			
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<ul style="list-style-type: none"> <li>o Schaghticoke Tribal Nation</li> <li>o Eastern Pequot Tribal Nation</li> </ul>			

Document Content(s)

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UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

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Algonquin Gas Transmission,  
LLC  
Algonquin Incremental Market Project

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Docket No. CP14-96-000  
PF13-16-000

**MOTION TO INTERVENE OF FOOD & WATER WATCH, STOP THE  
ALGONQUIN PIPELINE EXPANSION, THE SIERRA CLUB, LOWER HUDSON  
GROUP, BETTER FUTURE PROJECT, CAPITALISM V. CLIMATE AND  
FOSSIL FREE RHODE ISLAND**

On March 18, 2014, the Federal Energy Regulatory Commission (“FERC”) issued a notice of application under § 7 of the Natural Gas Act, 15 U.S.C. § 717f, and § 157 of FERC’s regulations, 18 C.F.R. § 157.1 et seq., for the proposed Algonquin Incremental Market Project (“Project”), FERC Docket No. CP14-96-000. As stated in FERC’s notice of application, Algonquin Gas Transmission LLC (“Algonquin”) seeks, among other things, authorization to construct up to 42-inch diameter pipelines and all appurtenant facilities as well as stations in New York, Connecticut, Rhode Island and Massachusetts. In accordance with Rule 214 of FERC’s Rules of Practice and Procedure, 18 C.F.R. § 385.214, Food & Water Watch, Stop The Algonquin Pipeline Expansion, the Sierra Club, Lower Hudson Group, Better Future Project, Capitalism vs. Climate and Fossil Free Rhode Island (“Intervenors”) respectfully move for the Commission to grant intervention in the above-captioned matter. While Intervenors have included some substantive comments in this motion, Intervenors may also submit more substantive comments at a later date.

**I. COMMUNICATION AND CORRESPONDENCE**

Service in this proceeding should be made upon, and communications should be directed to the following persons:

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## **II. INTERVENORS**

Food & Water Watch is an international non-profit organization that works to ensure that the food, water, and fish that humans consume is safe, accessible, and sustainable. To that end, Food & Water Watch promotes policies that will maintain the environmental integrity of our drinking water supplies, rather than put them at risk of degradation. Food & Water Watch has nearly 144,000 supporters in the four states where the Project is proposed, including in Fairfield, Hartford, Middlesex, New Haven and New London

counties, Connecticut: 12,000 supporters, in Putnam, Rockland and Westchester counties, New York: 7,300 supporters, in Suffolk and Bristol counties, Massachusetts: 4,400 supporters and in Providence County, Rhode Island: 1,900 supporters.

Sierra Club is a non-profit organization founded by legendary conservationist John Muir in 1892. It is now the nation's largest and most influential grassroots environmental organization with 64 chapters and approximately 2 million members and supporters nationwide. The Sierra Club's Lower Hudson Group has approximately 4,000 members in Rockland, Westchester, and Putnam counties.

Stop The Algonquin Pipeline Expansion is a grassroots group of approximately 30 members in Westchester, Putnam and Rockland counties, who also work in coalition with Connecticut, Rhode Island and Massachusetts groups to oppose the Project. An online petition initiated by SAPE opposing the Project has nearly 20,000 signatures.

Better Future Project is a Cambridge-based non-profit that seeks to build a grassroots movement to rapidly shift society beyond coal, oil and gas by coordinating programs like 350 Massachusetts, Climate Summer and Mothers Out Front. The group is composed of approximately 7,000 members.

Capitalism vs. the Climate organizes non-hierarchically and takes direct action in solidarity with communities most impacted by the climate crisis. We're members of Rising Tide North America. We started in 2012 in Connecticut, and our membership consists of 17 volunteers and supporters.

Fossil Free Rhode Island spurs real action on runaway climate change, which poses a mortal threat to the biosphere of which the human species is a part. We seek to redress inequitable distribution of environmental burdens of both local and global impact by opposing extreme energy projects such as the Keystone XL Pipeline, fracking, and mountaintop removal mining. We believe that all institutions that serve the public good should divest from fossil fuels. The group consists of about 30 members.

### **III. GROUNDS FOR INTERVENTION**

The Intervenor's oppose the Project and are extremely concerned about Algonquin's application. Members of these organizations and the constituents they serve live in the areas that will be directly impacted by the Project. The pipeline and its associated facilities will cut through four states, under the Hudson River, near an active quarry in the City of Boston, and through a number of sensitive watersheds and public lands. Intervenor's raise environmental, public health, and safety concerns on behalf of their members along the Project right of way, in the impacted communities, and across the proposed route.

#### **No Need For the Project**

As a threshold matter, Intervenor's question the necessity of the Project. We are

concerned that as domestic natural gas demand and prices remain low, the expanded capacity requested under this Project will be used to supply gas from the Marcellus Shale to proposed export facilities. The communities and our members impacted by this proposed pipeline infrastructure will not see environmental or economic benefits as a result of the Project. “Specifically, the Project will create additional pipeline capacity from the Ramapo, New York receipt point on Algonquin’s system to various Algonquin city gate delivery points in Connecticut, Rhode Island, and Massachusetts.”<sup>1</sup>

### **Environmental Impacts Resulting from Fracking**

This pipeline will carry gas from the Marcellus Shale, drilled using the technique known as hydraulic fracturing (“fracking”). The Project is designed to provide gas produced from the Marcellus Shale to New England markets. At a time when there is mounting evidence of the dangers inherent to fracking for natural gas, and given that the long-term productivities of Marcellus Shale gas wells are unknown, it is unwise to approve a proposal that will encourage such a practice in fragile ecosystems and populated areas. FERC must examine in its review of the proposed pipeline all secondary and cumulative impacts the Project will have, including encouraging the expansion of fracking in the region.

### **Connection to Existing or Potential LNG Ports**

Algonquin’s application states that the Project is being proposed to deliver gas to markets in New England; however, the proposed Project is both a product of development in the Marcellus Shale and a likely catalyst for further gas development by providing an avenue to export that gas to the international market. “The Algonquin natural gas transmission system connects with Texas Eastern’s facilities in New Jersey and extends approximately 250 miles through New Jersey, New York, Connecticut, Rhode Island and Massachusetts where it connects to Maritimes & Northeast (“M&N”) Pipeline.”<sup>2</sup> According to Spectra Energy Partners LP’s 10K report filed with the US Securities and Exchange Commission for 2013, “M&N US is connected to the Canadian portion of the Maritimes & Northeast Pipeline Limited Partnership, which is owned 78% by Spectra Energy.”<sup>3</sup> The AIM expansion project suggests that the gas may be exported to Canada and overseas.

The Project has the potential to make gas available for transport to LNG export facilities on the East Coast and in Canada. Three LNG facilities: the Northeast Gateway Deepwater Port and the Neptune Deepwater Port, both off of Gloucester, Massachusetts, and the Distrigas terminal in Boston Harbor are idle for lack of LNG import activity;

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<sup>1</sup> Docket CP14-96, Algonquin Resource Report 9, p. 9-1

<sup>2</sup> Form 10K, Spectra Energy Partners LP,  
[http://www.spectraenergypartners.com/content/documents/Spectra\\_Energy\\_Partners\\_Documents/SEP\\_2013\\_10-K.pdf](http://www.spectraenergypartners.com/content/documents/Spectra_Energy_Partners_Documents/SEP_2013_10-K.pdf), p. 7.  
 Form 10K, Spectra Energy Partners LP,  
[http://www.spectraenergypartners.com/content/documents/Spectra\\_Energy\\_Partners\\_Documents/SEP\\_2013\\_10-K.pdf](http://www.spectraenergypartners.com/content/documents/Spectra_Energy_Partners_Documents/SEP_2013_10-K.pdf), p. 7.

<sup>3</sup> Ibid., p.9.

these facilities could potentially be converted to export facilities.<sup>4</sup> The “Canaport” LNG facility in New Brunswick, Canada has been given permission to export gas via tanker as of November, 2013.<sup>5</sup> Pieridae Energy Canada is looking to site an LNG export facility in Nova Scotia.<sup>6</sup>

### **Exporting Gas Hurts National Economy, Not in Public Interest**

The Energy Information Administration (“EIA”) predicts the US will be a net exporter of Liquefied Natural Gas (“LNG”) by 2016. The U.S. Department of Energy (“DOE”) is currently reviewing applications for LNG export authorization. If all were approved this would lead to an export capacity of over 28 billion cubic feet (“Bcf”) per day, approximately 42 percent of what the U.S. produced daily in 2013.<sup>7</sup> The EIA predicts that an average of 63 percent of exported LNG will come from new gas drilling, but this could rise to 71 percent by 2035.<sup>8</sup>

An EIA study found considerable impacts from LNG exports, and researchers at Purdue University and other institutions have confirmed the EIA findings. Impacts that do not make this Project in the public convenience and necessity include:

- slightly depressed Gross Domestic Product (“GDP”): “Using the natural gas in the U.S. is more advantageous than exports, both economically and environmentally,”
- increased domestic price of natural gas—as much as 47%,
- higher electricity rates— as much as 7.2%
- increase in greenhouse gas emissions by as much as 12%,
- decreases in the manufacturing sector as much as 3.1%,
- fracking boom in shale formations,

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<sup>4</sup> Fitzgerald, Jay, “2 Costly LNG Terminals Sit Idle: Need Vanishes for Fuel Imports,” <http://www.bostonglobe.com/business/2013/01/23/offshore-gas-terminals-mass-bust-far/Qu8dyZzF6yBNAsDNaTT1ZJ/story.html>

<sup>5</sup> CBC News, “Canaport LNG given permission to export via tankers,” <http://www.cbc.ca/news/canada/new-brunswick/canaport-lng-given-permission-to-export-via-tankers-1.2441102>

<sup>6</sup> Bertrand Marotte, “In race to export LNG, a new Atlantic plan,” <http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/in-race-to-export-lng-a-new-atlantic-plan/article4634129/>

<sup>7</sup> Jacobson, Brad. “Fracking’s coming boom”. *Salon*. Apr 24 2012. [http://www.salon.com/2013/04/24/frackings\\_coming\\_boom\\_partner/](http://www.salon.com/2013/04/24/frackings_coming_boom_partner/) and US EIA Production Lookback 2013 <http://www.eia.gov/naturalgas/issuesandtrends/production/2013/>

<sup>8</sup> Mantius, Peter. “Obama Administration Said No to Full Environmental Study of LNG Exports”. *DC Bureau*. Apr 22 2013. <http://www.dcbureau.org/201304228396/natural-resources-news-service/obama-administration-says-no-to-full-environmental-study-of-lng-exports.html>

- major U.S. wealth transfer from consumers and energy-dependent industries to the natural gas industry and its investors<sup>9</sup>

Expanding the infrastructure to carry natural gas to export facilities is not in the best interest of the American people. As this Project will potentially allow Algonquin to transport more gas to proposed export facilities, the environmental, economic, and public health and safety impacts of exporting US natural gas must be included as a cumulative impact of this Project in the National Environmental Policy Act (“NEPA”) review.

### **Hudson Crossing Near Indian Point Nuclear Plant and Earthquake Fault Lines**

The Project includes the addition of a 42” diameter, high-pressure gas pipeline to the three already existing pipelines that cross under the Hudson River from Rockland County to Westchester County. The new pipeline may intersect underground with proposed high voltage power lines in close proximity to the Indian Point nuclear power plant’s 40 years of spent nuclear fuel rods and the Ramapo and Stamford earthquake fault lines.

Although Algonquin proposes “horizontal directional drills of 0.7 miles crossing the Hudson River,” should they encounter problems with that type of drilling, they may revert to more environmentally damaging dredging of the Hudson.<sup>10</sup>

### **Proximity to Active Quarry in Boston**

Residents of West Roxbury have raised concerns about the proximity of the Project to an active quarry, the West Roxbury Crushed Stone Company. Property owners adjacent to the quarry are already dealing with damage from routine blasting and facing potential soil contamination from proposed containment ponds. The West Roxbury Civic and Improvement Association also raised concerns about the lack of public hearings or permitting before the purchase of four acres for a new metering and regulating station.<sup>11</sup>

### **Methane Leakage and Impact on Climate Change**

Residents along the AIM project’s route are concerned about fugitive methane emissions from the pipeline, compressor stations, and metering and regulating stations. There are documented problems with valves that Spectra energy uses in gas infrastructure projects. The Pipeline Hazardous Materials Safety Administration (PHMSA) issued Spectra Energy CEO Greg Ebel a ‘final order’ and civil penalty of \$134,500 related to various

<sup>9</sup> Tyner, Wallace and Kemal Sarica. *Economic and Environmental Impacts of Increased US Natural Gas Exports*. Global Policy Research Institute, Purdue University. May 20 2013. <http://docs.lib.purdue.edu/cgi/viewcontent.cgi?article=1009&context=cwc>

<sup>10</sup> Application, Vol. 1, p. 7, 2/28/14: 201402285269 (291651971).pdf

<sup>11</sup> Matt Robare, “Residents, Politicians Concerned Over Quarry Plans,” <http://www.wickedlocal.com/x1304804017/Residents-politicians-concerned-over-quarry-plans>, “Residents concerned over gas pipeline through West Roxbury, Westwood,” <http://www.wickedlocal.com/article/20131223/NEWS/312239658>

violations across several states.<sup>12</sup> Issued in this order, the company was cited for failure regarding valve inspection.

“Trillium Asset Management, with over \$1 billion in assets under management, has filed a shareholder resolution requesting a report from Spectra Energy’s Board of Directors on its fugitive methane emissions.<sup>13</sup>

Methane emissions from shale gas infrastructure projects are recognized as a significant contributor to climate change.<sup>14</sup> Methane 86 times more powerful than CO<sub>2</sub> as a greenhouse gas over 20 years.<sup>15</sup> Therefore, shale gas infrastructure with methane leakage of up to 9% is undermining efforts to slow climate change.<sup>16</sup>

### **Inadequate Oversight**

Regulation of pipeline safety is not only severely fragmented among dozens of federal, state, and local agencies, but is severely under-resourced in terms of personnel and funding. When regulators are incapable of coping with the existing hazards and damage to water safety and quality, it is extremely unwise to tolerate additional hazardous activities.

There have been a number of pipeline disasters in the current decade alone. A 2010 natural gas line explosion in San Bruno, California killed eight people and damaged or destroyed dozens of homes. Also in 2010, a pipeline oil spill caused more than \$1 billion in damage to the Kalamazoo River.

Jeffrey Wiese, the leading official in oil and gas pipeline safety, admitted to a convention of compliance officers that his agency, the Pipeline and Hazardous Materials Administration (“PHMSA”), has limited enforcement power over safety rules.<sup>17</sup> The PHMSA’s budget for pipeline safety has not increased for the past three years, although thousands of miles of new pipeline have been built. The Obama administration sought additional funding for pipeline safety enforcement, but Congress has refused to provide it pursuant to the sequester. According to Wiese, it is no longer “viable” to use the regulatory process to respond to dangerous conditions, because it takes too long.

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<sup>12</sup> PHMSA Final Order, 12/21/12:

[http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/420121009\\_Final%20Order\\_12212012.pdf](http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/420121009_Final%20Order_12212012.pdf)

<sup>13</sup> Trillium Asset Management, “Fugitive Methane Emission Report,” Spectra Energy 2013,

[“http://www.trilliuminvest.com/resolutions/fugitive-methane-emissions-report-spectra-energy-2013/](http://www.trilliuminvest.com/resolutions/fugitive-methane-emissions-report-spectra-energy-2013/)

<sup>14</sup> Intergovernmental Panel on Climate Change, “Climate Change 2013, Summary for Policymakers,”

[https://www.ipcc.ch/report/ar5/wg1/docs/WGIAR5\\_SPM\\_brochure\\_en.pdf](https://www.ipcc.ch/report/ar5/wg1/docs/WGIAR5_SPM_brochure_en.pdf)

<sup>15</sup> PHMSA Final Order, 12/21/12:

[http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/420121009\\_Final%20Order\\_12212012.pdf](http://www.phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/420121009_Final%20Order_12212012.pdf)

<sup>16</sup> Jeff Tollefson, “Methane Leaks Erode Green Credentials of Natural Gas,” 1/2/13, <http://www.nature.com/news/methane-leaks-erode-green-credentials-of-natural-gas-1.12123>

<sup>17</sup> Stern, Marcus and Sebastian Jones. “Exclusive: Pipeline Safety Chief Says His Regulatory Process Is ‘Kind of Dying’.” InsideClimate News, Sep 11, 2013. <http://insideclimatenews.org/news/20130911/exclusive-pipeline-safety-chief-says-his-regulatory-process-kind-dying>

California Congress member Jackie Speier said that “The [energy] industry has a lock on PHMSA” and on Congress, causing public interests to be “dramatically watered down”—for example, the oil and gas industry has prevented the institution of requirements of remote shutoff valves for pipelines.<sup>18</sup>

Many hazardous materials are carried in pipelines, and over half of the pipeline now in service has been in use for three or four decades, making it likely that at least some areas are affected by corrosion and other sources of failure. Yet, PHMSA has only 135 inspectors, and there are 2.6 million miles of pipeline already in service. Since 2006, PHMSA and cooperating state agencies have inspected only one-fifth of the existing pipeline capacity.

Although Congress increased the maximum fines in 2011, Wiese said that a \$2 million civil penalty is irrelevant to a major multinational corporation, and does not deter industry practices that could lead to major accidents. Strengthening regulation is difficult: adoption of a new pipeline rule can take as long as three years. Wiese announced that PHMSA is setting up a YouTube channel to persuade industry to voluntarily adopt better safety practices. However, American Petroleum Institute spokesman Brian Straessle said that the pipeline infrastructure is protected by “strong standards in place,” and that the industry has financial incentives to prevent incidents and protect the environment.

Approving the AIM project would merely add additional potential hazards while the overburdened PHMSA is already struggling to protect public safety.

### **Health Risks Related to Air Emissions**

Residents throughout the entire region will be impacted by air emissions from the infrastructure related to the AIM Project. The application states “Algonquin will modify six existing Algonquin compressor stations to add an additional 81,620 hp to its pipeline system as part of the AIM Project. This increase in horsepower will be achieved with the installation of six new compressor units.”<sup>19</sup>

Air emissions from compressor stations include benzene, toluene, formaldehyde and many other chemicals. The existing emissions and the estimated increase in emissions is not clearly delineated in the application and some of the information about existing equipment is not available to the public. The compressor station expansions at Stony Point and Southeast, NY, Cromwell and Chaplin, CT and Burrillville, RI are sited in regions currently considered non-attainment areas for a variety of emissions. The section about the Oxford, CT compressor station seems to be omitted from the application. Residents along the route of the AIM Project have serious concerns about the increased emissions associated with the expansion and resulting health impacts.

Health impacts associated with compressor station emissions include nosebleeds, visual

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<sup>18</sup> *Ibid.*

<sup>19</sup> Spectra Energy Resource Report 9, p.9-2



impairment, neurological and respiratory problem, leukemia, aplastic anemia, lung, liver, kidney and cardiovascular disease. Children, pregnant women, elderly and health-compromised populations are particularly vulnerable.<sup>20</sup>

Cumulative impacts of the entire proposal should be assessed and a formal Health Impact Assessment (HIA), as outlined by the Centers for Disease Control, should be conducted and included in the Environmental Impact Statement. Baseline testing of air emissions in regions surrounding the compressor stations should be conducted prior to permitting by the state agencies.

### **Sedimentation**

Sedimentation, erosion, and potential contamination impacts to water bodies and wetlands during construction will lower water quality. Additionally, severe compaction of the soil will reduce the ability for water to recharge groundwater supplies. Intervenors note that locating the Project on these lands will create a new conduit for water through the gravel surrounding the pipeline, altering the hydrologic pattern of the watershed lands. Water will run parallel with the new pipeline instead of recharging aquifers and river ecosystems, degrading the quality and quantity of water available to residents.

### **Environmental Impacts to Blue Mountain Park**

County parkland in which significant environmental impacts of the Project are clear is the 1,538-acre Blue Mountain Reservation in Westchester County. Protection of the park is important both ecologically and economically to the area.

The serious degradation of ground and surface waters, publically owned lands, and forest habitats associated with this Project make it potentially dangerous and not in the public convenience and necessity.

## **IV. CONCLUSION**

Intervenors have considerable interest and are invested in protecting the environmental and public health of the areas in which the Project is proposed to be built. Intervenor's intervention in the Project application process is in the public interest as required by 18 C.F.R. §385.214(b)(2)(iii). No other party in this proceeding will be able to adequately protect these interests. Accordingly, Intervenors have a direct and substantial interest in the outcome of this application process.

For the reasons set forth above, the Intervenors respectfully request that this Motion to Intervene be granted and that they be permitted to participate, with the full rights of a party, in the above-captioned proceeding before FERC.

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<sup>20</sup> Wilma Subra, Power Point presentation, 12/11/14:

[http://sape2016.files.wordpress.com/2013/10/algonquin\\_incremental\\_market\\_project.pdf](http://sape2016.files.wordpress.com/2013/10/algonquin_incremental_market_project.pdf)

Respectfully Submitted,

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Fossil Free Rhode Island  
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Document Content(s)

Motion to Intervene Food and Water Watch et al.PDF.....1-10

Submission Description: (doc-less) Motion to Intervene of Riverkeeper, Inc. under CP14-96-000.

Submission Date: 4/8/2014 3:25:45 PM

Filed Date: 4/8/2014 3:25:45 PM

#### Dockets

CP14-96-000 Algonquin Gas Transmission, LLC's Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations re its proposed Algonquin Incremental Market (AIM) Project under CP14-96.

#### Filing Party/Contacts:

Filing Party	Signer (Representative)
Other Contact (Principal)	
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Riverkeeper, Inc.	mduvall@riverkeeper.org

#### Basis for Intervening:

Pursuant to Rule 214 of the Federal Energy Regulatory Commission's (FERC or Commission) Rules of Practice and Procedure, 18 CFR § 385.214, Riverkeeper, Inc. (Riverkeeper) hereby moves to intervene in the instant proceeding. In addition, pursuant to Rule 213(a)(2) of the Commission's rules, 18 C.F.R. § 385.213(a)(2), Riverkeeper respectfully requests permission to respond to any answer that may be filed in opposition to its Motion to Intervene.

Riverkeeper is a member-supported, non-profit environmental organization with more than 3,600 members, dedicated to defending the Hudson River and its tributaries and to protecting the drinking water supply of nine million New York City and Hudson Valley residents. Riverkeeper is actively involved in litigation, advocacy, and public education surrounding the issue of shale gas extraction and related infrastructure, particularly because of the potential impacts on New York State's drinking water supplies.

As described below, Riverkeeper meets the requirements for a motion to intervene set forth in 18 CFR § 385.214(b)(1) and (2).

In accordance with our mission, Riverkeeper seeks to ensure that the New York City (NYC) drinking water supply watershed and the Hudson River and its watershed are protected, and that the project complies with the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq., Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251 et seq., Safe Drinking Water Act, 42 U.S.C. §§ 300f et seq., and other applicable laws and regulations. See 18 CFR 385.214(b)(1). As detailed in Riverkeeper's comments on the application (Docket No. CP 14-96-000, dated April 8, 2014), which are incorporated by reference in full herein, the Algonquin Incremental Market Project (AIM Project) has the potential to significantly impact not only the Hudson River and its watershed, but also a portion of the NYC drinking water supply watershed. We urge the Commission to take a hard look at all of the likely and reasonably foreseeable environmental impacts that would or could result from the project.

Riverkeeper represents interests that may be directly affected by the outcome of this proceeding. See 18 CFR 385.214(b)(2)(ii). A significant number of

Riverkeeper members depend on the NYC watershed for their drinking water supply, and use and enjoy the Hudson River and its tributaries. Any impacts to the NYC watershed or Hudson River and its watershed could directly affect their interests in clean water and use and enjoyment of the Hudson River and its tributaries. In addition, many Riverkeeper members are also located along the pipeline route and may potentially be affected by construction and maintenance activities.

Riverkeeper's participation is also in the public interest. See 18 CFR 385.214(b)(2)(iii). Riverkeeper's mission is to safeguard the drinking water supply of the nine million New Yorkers who depend on the NYC watershed and to protect the environmental, recreational, and commercial integrity of the Hudson River. As both of these resources may be adversely impacted by the AIM Project, Riverkeeper's participation will help ensure protection of the NYC and Hudson River watersheds and is in the public interest.

Finally, Riverkeeper further qualifies for intervenor status as a party actively participating in the environmental review process. See 18 CFR § 380.10(a). Riverkeeper submitted comments during the scoping process (Docket No. PF 13-16-000, dated October 15, 2013) and on environmental aspects of the application, and plans to continue to fully participate in the environmental review process, including submitting comments on the Draft Environmental Impact Statement.

Document Content(s)

471128\_Interv.TXT.....1-2

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC

Docket No. CP14-96-000

NOTICE OF AVAILABILITY OF THE  
DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED  
ALGONQUIN INCREMENTAL MARKET PROJECT

(August 6, 2014)

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a draft environmental impact statement (EIS) for the Algonquin Incremental Market Project (AIM Project), proposed by Algonquin Gas Transmission, LLC (Algonquin) in the above-referenced docket. Algonquin requests authorization to expand its existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 dekatherms per day of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets.

The draft EIS assesses the potential environmental effects of the construction and operation of the AIM Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed project would result in some adverse environmental impacts; however, most of these impacts would be reduced to less-than-significant levels with the implementation of Algonquin's proposed mitigation and the additional measures recommended in the draft EIS.

The U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration participated as cooperating agencies in the preparation of the EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. Although the cooperating agencies provided input to the conclusions and recommendations presented in the draft EIS, the agencies will present their own conclusions and recommendations in their respective records of decision or determinations for the AIM Project.

The draft EIS addresses the potential environmental effects of the construction and operation of about 37.6 miles of pipeline composed of the following facilities:

- replacement of 26.3 miles of existing pipeline with a 16- and 42-inch-diameter pipeline;



- extension of an existing loop<sup>1</sup> pipeline with about 3.3 miles of additional 12- and 36-inch-diameter pipeline within Algonquin's existing right-of-way; and
- installation of about 8.0 miles of new 16-, 24-, and 42-inch-diameter pipeline.

The AIM Project's proposed aboveground facilities consist of modifications to six existing compressor stations, to add a total 81,620 horsepower, in New York, Connecticut, and Rhode Island. Algonquin also proposes to abandon four existing compressor units for a total of 10,800 horsepower at one compressor station in New York.

The FERC staff mailed copies of the draft EIS to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; newspapers and libraries in the project area; and parties to this proceeding. Paper copy versions of this EIS were mailed to those specifically requesting them; all others received a CD version. In addition, the draft EIS is available for public viewing on the FERC's website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. A limited number of copies are available for distribution and public inspection at:

Federal Energy Regulatory Commission  
Public Reference Room  
888 First Street NE, Room 2A  
Washington, DC 20426  
(202) 502-8371

Any person wishing to comment on the draft EIS may do so. To ensure consideration of your comments on the proposal in the final EIS, it is important that the Commission receive your comments on or before **September 29, 2014**.

For your convenience, there are four methods you can use to submit your comments to the Commission. In all instances, please reference the project docket number (CP14-96-000) with your submission. The Commission encourages electronic filing of comments and has expert staff available to assist you at (202) 502-8258 or [efiling@ferc.gov](mailto:efiling@ferc.gov). Please carefully follow these instructions so that your comments are properly recorded.

- 1) You can file your comments electronically using the [eComment](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). This is an easy method for submitting brief, text-only comments on a project;

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<sup>1</sup> A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity.

- 2) You can file your comments electronically by using the [eFiling](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on “[eRegister](#).” If you are filing a comment on a particular project, please select “Comment on a Filing” as the filing type; or
- 3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary  
 Federal Energy Regulatory Commission  
 888 First Street NE, Room 1A  
 Washington, DC 20426

- 4) In lieu of sending written or electronic comments, the Commission invites you to attend one of the public comment meetings its staff will conduct in the project area to receive comments on the draft EIS. We encourage interested groups and individuals to attend and present oral comments on the draft EIS. Transcripts of the meetings will be available for review in eLibrary under the project docket number. **All meetings will begin at 6:30 p.m. and are scheduled as follows:**

<b>Date</b>	<b>Location</b>
<b>Monday, September 8, 2014</b>	Holiday Inn Dedham 55 Ariadne Road Dedham, MA 02026 (781) 329-1000
<b>Tuesday, September 9, 2014</b>	Holiday Inn Norwich 10 Laura Blvd. Norwich, CT 06360 (860) 889-5201
<b>Wednesday, September 10, 2014</b>	Danbury City Hall City Council Chambers 155 Deer Hill Ave Danbury, CT 06810 (203) 797-4514

Date	Location
<b>Thursday, September 11, 2014</b>	Muriel H. Morabito Community Center 29 Westbrook Drive Cortlandt Manor, NY 10567 (914) 739-5845

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 Code of Federal Regulations Part 385.214).<sup>2</sup> Only intervenors have the right to seek rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

### Questions

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP14-96). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at FercOnline [Support@ferc.gov](mailto:Support@ferc.gov) or toll free at (866) 208-3676; for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

Kimberly D. Bose,  
Secretary.

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<sup>2</sup> See the previous discussion on the methods for filing comments.

Document Content(s)

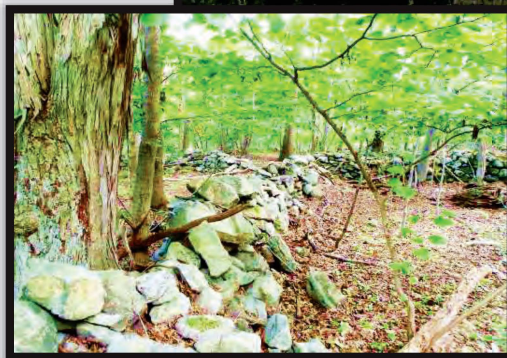
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**Federal Energy Regulatory Commission**  
**Office of Energy Projects**  
**Washington, DC 20426**

# **Algonquin Incremental Market Project**

## ***Draft Environmental Impact Statement***



**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**FERC/EIS-0254D**

**Cooperating Agencies:**



**U.S. Environmental  
Protection Agency**



**Pipeline and Hazardous  
Materials Safety  
Administration**



**U.S. Army Corps  
of Engineers**





FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:  
OEP/DG2E/Gas 2  
Algonquin Gas Transmission, LLC  
Docket No. CP14-96-000  
FERC/EIS-0254

## TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a draft environmental impact statement (EIS) for the Algonquin Incremental Market Project (AIM Project), proposed by Algonquin Gas Transmission, LLC (Algonquin) in the above-referenced docket. Algonquin requests authorization to expand its existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 dekatherms per day of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets.

The draft EIS assesses the potential environmental effects of the construction and operation of the AIM Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed project would result in some adverse environmental impacts; however, most of these impacts would be reduced to less-than-significant levels with the implementation of Algonquin's proposed mitigation and the additional measures recommended in the draft EIS.

The U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration participated as cooperating agencies in the preparation of the EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. Although the cooperating agencies provided input to the conclusions and recommendations presented in the draft EIS, the agencies will present their own conclusions and recommendations in their respective records of decision or determinations for the AIM Project.

The draft EIS addresses the potential environmental effects of the construction and operation of about 37.6 miles of pipeline composed of the following facilities:

- replacement of 26.3 miles of existing pipeline with a 16- and 42-inch-diameter pipeline;



- extension of an existing loop<sup>1</sup> pipeline with about 3.3 miles of additional 12- and 36-inch-diameter pipeline within Algonquin's existing right-of-way; and
- installation of about 8.0 miles of new 16-, 24-, and 42-inch-diameter pipeline.

The AIM Project's proposed aboveground facilities consist of modifications to six existing compressor stations, to add a total 81,620 horsepower, in New York, Connecticut, and Rhode Island. Algonquin also proposes to abandon four existing compressor units for a total of 10,800 horsepower at one compressor station in New York.

The FERC staff mailed copies of the draft EIS to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; newspapers and libraries in the project area; and parties to this proceeding. Paper copy versions of this EIS were mailed to those specifically requesting them; all others received a CD version. In addition, the draft EIS is available for public viewing on the FERC's website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. A limited number of copies are available for distribution and public inspection at:

Federal Energy Regulatory Commission  
Public Reference Room  
888 First Street NE, Room 2A  
Washington, DC 20426  
(202) 502-8371

Any person wishing to comment on the draft EIS may do so. To ensure consideration of your comments on the proposal in the final EIS, it is important that the Commission receive your comments on or before **September 29, 2014**.

For your convenience, there are four methods you can use to submit your comments to the Commission. In all instances, please reference the project docket number (CP14-96-000) with your submission. The Commission encourages electronic filing of comments and has expert staff available to assist you at (202) 502-8258 or [efiling@ferc.gov](mailto:efiling@ferc.gov).

- 1) You can file your comments electronically using the [eComment](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). This is an easy method for submitting brief, text-only comments on a project;

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<sup>1</sup> A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity.

- 2) You can file your comments electronically by using the [eFiling](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on “[eRegister](#).” If you are filing a comment on a particular project, please select “Comment on a Filing” as the filing type; or
- 3) You can file a paper copy of your comments by mailing them to the following address:

Kimberly D. Bose, Secretary  
 Federal Energy Regulatory Commission  
 888 First Street NE, Room 1A  
 Washington, DC 20426

- 4) In lieu of sending written or electronic comments, the Commission invites you to attend one of the public comment meetings its staff will conduct in the project area to receive comments on the draft EIS. We encourage interested groups and individuals to attend and present oral comments on the draft EIS. Transcripts of the meetings will be available for review in eLibrary under the project docket number. **All meetings will begin at 6:30 p.m. and are scheduled as follows:**

<b>Date</b>	<b>Location</b>
<b>Monday, September 8, 2014</b>	Holiday Inn Dedham 55 Ariadne Road Dedham, MA 02026 (781) 329-1000
<b>Tuesday, September 9, 2014</b>	Holiday Inn Norwich 10 Laura Blvd. Norwich, CT 06360 (860) 889-5201
<b>Wednesday, September 10, 2014</b>	Danbury City Hall City Council Chambers 155 Deer Hill Ave Danbury, CT 06810 (203) 797-4514
<b>Thursday, September 11, 2014</b>	Muriel H. Morabito Community Center 29 Westbrook Drive Cortlandt Manor, NY 10567 (914) 739-5845

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (Title 18 Code of Federal Regulations Part 385.214).<sup>2</sup> Only intervenors have the right to seek rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding that no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

### **Questions?**

Additional information about the project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP14-96). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov) or toll free at (866) 208-3676; for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

Kimberly D. Bose

Secretary

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<sup>2</sup> See the previous discussion on the methods for filing comments.

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## ACRONYMS AND ABBREVIATIONS

AAQS	ambient air quality standards
AC/DC	alternating current/direct current
ACHP	Advisory Council on Historic Preservation
AIM Project	Algonquin Incremental Market Project
Algonquin	Algonquin Gas Transmission, LLC
APA	Aquifer Protection Areas
APC	Air Pollution Control
APE	Area of Potential Effect
AQCR	Air quality control region
ATWS	additional temporary workspace
BA	biological assessment
Bay State	Bay State Gas Company d/b/a Columbia Gas of Massachusetts, Inc.
BCA	Bird Conservation Area
BCC	Birds of Conservation Concern
bcf/d	billion cubic feet per day
BCR	Bird Conservation Region
BDP Plan	Best Drilling Practices Plan
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practices
BNAN	Boston Natural Areas Network
BO	Biological Opinion
BOEM	Bureau of Ocean and Energy Management
Boston Gas	Boston Gas Company d/b/a National Grid
CAA	Clean Air Act
CDPH	Connecticut Department of Public Health
CEAs	critical environmental areas
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CES	Comprehensive Energy Strategy
CFR	Code of Federal Regulations
CGS	Connecticut General Statutes
CH <sub>4</sub>	methane
CHPE	Champlain Hudson Power Express
CMR	Code of Massachusetts Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalents
Colonial Gas	Colonial Gas Company d/b/a National Grid

## ACRONYMS AND ABBREVIATIONS (cont'd)

Commission	Federal Energy Regulatory Commission
Connecticut Natural Gas	Connecticut Natural Gas Corporation
CTDEEP	Connecticut Department of Energy and Environmental Protection
CTransit	Connecticut Transit
CWA	Clean Water Act
CWRMP	Compensatory Wetland Restoration and Mitigation Plan
CZMA	Coastal Zone Management Act of 1972
CZMP	coastal zone management program
dB	decibels
dBA	decibels on the A-weighted scale
DCR	Division of Coastal Resources
DOE	U.S. Department of Energy
DOE/EIA	U.S. Department of Energy's Energy Information Administration
DPS	distinct population segment
DPW	Department of Public Works
Dth/d	dekatherms per day
E&SCP	Erosion and Sediment Control Plan
EDR	Environmental Data Resources, Inc.
EFH	Essential Fish Habitat
EI	Environmental Inspector
EIEA	Energy Improvement and Extension Act
EIS	environmental impact statement
EISA	Energy Independence and Security Act of 2007
Entergy	Entergy Nuclear Operations, Inc.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 2005
ESA	Endangered Species Act of 1973
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
g	gravity
GHGs	greenhouse gases
GIS	Geographic Information System
GW	gigawatt
GWh	gigawatt hours
GWP	global warming potential
GZA	GeoEnvironmental, Inc.
HAP	Hazardous Air Pollutant

## ACRONYMS AND ABBREVIATIONS (cont'd)

HAZWOPER	Hazardous Waste Operations and Emergency Response
HCA	high consequence area
HDD	horizontal directional drill
HMM	Hatch Mott MacDonald, LLC
hp	horsepower
HPU	hydraulic power unit
IBA	Important Bird Area
INGAA	Interstate Natural Gas Association of America
IPCC	Intergovernmental Panel on Climate Change
IPEC	Indian Point Energy Center
Iroquois	Iroquois Gas Transmission
IWWC	inland wetlands and watercourse agencies
kW	kilowatt
L <sub>90</sub>	lowest background A-weighted sound level that is exceeded 90 percent of the time
LDCs	local distribution companies
L <sub>dn</sub>	day-night sound level
L <sub>eq</sub>	24-hour equivalent sound level
LNG	liquefied natural gas
LOS	current level of service
LWRP	Local Waterfront Revitalization Program
M&R	metering and regulating
MACZM	Massachusetts Office of Coastal Zone Management
MADCR	Massachusetts Department of Conservation and Recreation
MAEFSB	Massachusetts Energy Facilities Siting Board
MAEOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
MAOP	maximum allowable operating pressure
MassDEP	Massachusetts Department of Environmental Protection
MassGIS	Massachusetts Geographic Information System
m <sub>bLg</sub>	short-period body-wave magnitude
MBTA	Migratory Bird Treaty Act
MBTA MOU	Memorandum of Understanding Between the Federal Energy Regulatory Commission and the U.S. Department of the Interior United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds"
MDFW	Massachusetts Division of Fisheries and Wildlife
MDOT	Massachusetts Department of Transportation
MECC	Massachusetts Electric Construction Company
Memorandum	Memorandum of Understanding on Natural Gas Transportation
MIPAG	Massachusetts Invasive Plant Advisory Group

## ACRONYMS AND ABBREVIATIONS (cont'd)

MLR	mainline regulators
MLV	mainline valve
MMBtu/hr	million metric British thermal units per hour
MMPA	Marine Mammal Protection Act
MNHESP	Massachusetts Natural Heritage and Endangered Species Program
MP	milepost
MSA	Magnuson-Stevens Fishery Conservation and Management Act
msl	mean sea level
MW	megawatt
MWh	megawatt hours
N <sub>2</sub> O	nitrous oxide
NAAQS	national ambient air quality standards
Narragansett Electric	The Narragansett Electric Company d/b/a National Grid
NEHC	New England Hydropower Company, LLC
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NNSR	Nonattainment New Source Review
NO <sub>2</sub>	nitrogen dioxide
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NOI	Notice of Intent to Prepare an Environmental Impact Statement for the Planned Algonquin Incremental Market Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NPU	Norwich Public Utilities
NRC	U.S. Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	National Rivers Inventory
NSA	noise-sensitive area
NSPS	New Source Performance Standards
NSR	New Source Review
NSTAR	NSTAR Gas Company
NWI	National Wetlands Inventory
NYCDEP	New York City Department of Environmental Protection

## ACRONYMS AND ABBREVIATIONS (cont'd)

NYCRR	New York Codes, Rules and Regulations
NYNHP	New York Natural Heritage Program
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSOPRHP	New York State Office of Parks, Recreation and Historic Preservation
NYSPSC	New York State Public Service Commission
OCRM	NOAA, Office of Coast and Management
OEP	Office of Energy Projects
OPS	Office of Pipeline Safety
ORW	Outstanding Resource Water
OSHA	Occupational Safety and Health Administration
PAR	permanent access roads
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PEM	palustrine emergent wetlands
PFO	palustrine forested
PGA	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIPC	Palisades Interstate Park Commission
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
PM	particulate matter
PM <sub>10</sub>	particulate matter less than 10 microns in aerodynamic diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in aerodynamic diameter
PNHP	Pennsylvania Natural Heritage Program
Primary Aquifers	Primary Water Supply Aquifers
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Algonquin Incremental Market Project
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
PTE	potential-to-emit
PVC	Polyvinyl Chloride pipe
RCSA	Regulation of Connecticut State Agencies
RHA	Rivers and Harbors Act
RICE	reciprocating internal combustion engines
RIDEM	Rhode Island Department of Environmental Management
RIISC	Rhode Island Invasive Species Council
RINHP	Rhode Island Natural Heritage Program

## ACRONYMS AND ABBREVIATIONS (cont'd)

RQD	rock quality designation
SCFWH	Significant Coastal Fish and Wildlife Habitat
SDWA	Safe Drinking Water Act
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SOP	standard operating procedure
Southern Connecticut	The Southern Connecticut Gas Company
SPCC Plan	Spill Prevention Control and Countermeasure Plan/Preparedness, Prevention, and Contingency Plan for the Algonquin Incremental Market Project
SPDES	State Pollution Discharge Elimination System
Spectra	Spectra Energy Corporation
SPL	sound pressure level
SSA	sole or principal source aquifer
SSURGO	Soil Survey Geographic Database
SWAP	Source Water Assessment Program
SWPPP	Stormwater Pollution Prevention Plan
TAR	temporary access roads
Tennessee	Tennessee Gas Pipeline
TSA	Office of Homeland Security's Transportation Safety Administration
TTC	temporary traffic control
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
USN	unique site number
VOC	volatile organic compound
WEG	wind erodibility group
WHPP	Wellhead Protection Program
WPP	West Point Partners
WPT	West Point Transmission
WQC	Water Quality Certification
Yankee Gas	Yankee Gas Services Company



## EXECUTIVE SUMMARY

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### INTRODUCTION

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this draft Environmental Impact Statement (EIS) to fulfill requirements of the National Environmental Policy Act of 1969 and the Commission's implementing regulations under Title 18 of the Code of Federal Regulations (CFR) Part 380. On February 28, 2014, Algonquin Gas Transmission, LLC (Algonquin) filed an application with FERC under sections 7(b) and (c) of the Natural Gas Act, as amended, and Part 157 of the Commission's regulations to construct, abandon, install, own, operate, and maintain expansions of its existing interstate natural gas pipeline systems in New York, Connecticut, Rhode Island, and Massachusetts. This project is referred to as the Algonquin Incremental Market Project (AIM Project or Project). The purpose of this document is to inform the public and federal and state agencies about the potential environmental impacts of the Project and its alternatives, and to recommend appropriate mitigation that would avoid or reduce significant adverse impacts.

The FERC is the federal agency responsible for authorizing interstate natural gas transmission facilities under the Natural Gas Act, and is the lead federal agency for the preparation of this EIS in compliance with the requirements of the National Environmental Policy Act. The U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers (USACE), and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration, participated as cooperating agencies in the preparation of the EIS. A cooperating agency has jurisdiction by law or has special expertise with respect to environmental resource issues associated with a project.

### PROPOSED ACTION

The Project would involve the construction and operation of about 37.6 miles of natural gas pipeline and associated equipment and facilities in New York, Connecticut, and Massachusetts. The majority of the pipeline facilities (about 26.3 miles or 70 percent of the total 37.6 miles) would replace existing Algonquin pipelines, while the remainder of the pipeline facilities (about 11.3 miles or 30 percent) consists of new mainline pipeline, new loop pipeline, and one new lateral pipeline. In addition to the pipeline facilities, Algonquin would modify 6 existing compressor stations and 24 existing metering and regulating (M&R) stations; construct 3 new M&R stations; and remove an existing M&R station. Modifications to the six existing compressor stations include the installation of 81,620 total horsepower (hp) in New York, Connecticut, and Rhode Island. Algonquin also proposes to abandon four existing compressor units for a total of 10,800 hp at one compressor station in New York. Algonquin would also modify three existing mainline valve (MLV) sites and five existing pig<sup>1</sup> launcher/receiver sites, construct five new launcher/receiver sites, construct new MLV cross over piping at two locations, and construct a new MLV. Mainline regulation facilities would also be added at the terminus of one of the pipeline segments in New York.

According to Algonquin, the purpose of the AIM Project is to expand its existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 dekatherms per day of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets. Algonquin's stated objectives for the Project are:

- to provide the pipeline capacity necessary to transport additional natural gas supplies to meet the immediate and future load growth demands of local gas utilities in southern New England;

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<sup>1</sup> A pipeline "pig" is a device to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline.

- eliminate capacity constraints on existing pipeline systems in New York State and southern New England;
- provide access to growing natural gas supply areas in the Northeast region to increase competition and reduce volatility in natural gas pricing in southern New England; and
- improve existing compressor station emissions through the replacement of existing compressor units with new, efficient units.

## PUBLIC INVOLVEMENT

On June 18, 2013, Algonquin filed a request with the FERC to implement the Commission's pre-filing process for its Project. At that time, Algonquin was in the preliminary design stage of its Project and no formal application had been filed. The purpose of the pre-filing process is to encourage the early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the FERC. On June 28, 2013, the FERC granted Algonquin's request and established a pre-filing docket number (PF13-16-000) to place information related to the Project into the public record. The cooperating agencies agreed to conduct their environmental reviews of the Project in conjunction with the Commission's environmental process.

On September 13, 2013, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Algonquin Incremental Market Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings* (NOI). The NOI was published in the Federal Register on September 19, 2013, and copies were mailed to over 1,800 parties, including representatives of federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; other interested parties; and local libraries and newspapers. The FERC staff continued to receive and consider comments during the entire pre-filing period and throughout the development of this EIS. We<sup>2</sup> held four public scoping meetings in the AIM Project area to solicit and receive comments on environmental issues associated with this Project. The meetings were held September 30, 2013 through October 3, 2013 in the Town of Cortlandt, New York; Danbury and Norwich, Connecticut; and the Town of Dedham, Massachusetts.

Additionally, we participated in Algonquin's open houses, interagency meetings, conference calls, and site visits for the AIM Project to identify issues to be addressed in this draft EIS. The meetings, conference calls, and site visits provided a forum for the exchange of information and supported the FERC's responsibility to coordinate federal authorizations and associated environmental review of the AIM Project.

## PROJECT IMPACTS AND MITIGATION

Construction and operation of the Project could result in numerous impacts on the environment. We evaluated the impacts of the Project, taking into consideration Algonquin's proposed mitigation measures on geology, soils, groundwater, surface water, wetlands, vegetation, wildlife, fisheries, special status species, land use, recreation, visual resources, socioeconomic, cultural resources, air quality, noise, and safety and reliability. Where necessary, we are recommending additional mitigation to minimize or avoid these impacts. Also, in some cases, we are recommending that Algonquin file certain information prior to the end of the public comment period to allow us to revise or potentially eliminate recommendations in the final EIS. Cumulative impacts of this Project with other past, present, and reasonably foreseeable actions in the Project area were also assessed. In section 3 of this EIS, we

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<sup>2</sup> The pronouns "we," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

summarize the evaluation of alternatives to the Project, including the No Action Alternative, energy alternatives, system alternatives, facility design and siting alternatives, route alternatives and variations, and aboveground facility siting alternatives.

Based on scoping comments, agency consultations, and our independent evaluation of resource impacts, the major issues identified in our analysis are in regard to blasting impacts, waterbody crossings, wetlands, special status species, land use and recreation, traffic impacts, safety, and alternatives. Our analysis of these issues is summarized below and is discussed in detail in the appropriate resource sections in sections 3 and 4 of this EIS. Sections 5.1 and 5.2 of this EIS contain our conclusions and a compilation of our recommended mitigation measures, respectively.

The potential for geologic hazards, including seismic events, to significantly affect construction or operation of the proposed Project facilities is low. Although the Ramapo Fault has been linked to recent earthquake occurrence in the area, the design of the pipeline takes into consideration site-specific conditions, including earthquakes. The recorded magnitude of earthquakes in the Project area is relatively low and the ground vibration would not pose a problem for a modern welded-steel pipeline.

The pipeline segments would traverse about 7.2 miles of shallow bedrock that may require blasting. In order to minimize potential impacts from blasting, Algonquin would comply with all federal, state, and local regulations for blasting and has developed an acceptable Rock Removal Plan to be used during construction.

Existing soil contamination could be encountered during construction. Algonquin has developed an *Unexpected Contamination Encounter Procedures* to address the measures it would implement if contaminated soils are crossed during construction. To-date, Algonquin has also determined that field sampling would be required at two locations (one in Connecticut and one in Massachusetts). However, the Connecticut Department of Energy and Environmental Protection (CTDEEP) also identified a concern at a third site. We are recommending that prior to construction, Algonquin develop a Field Sampling Plan for these and any other potential contaminated sites that could be encountered during construction.

The Project would cross 108 waterbodies, including 42 perennial streams, 62 intermittent streams, 3 ephemeral streams, and a ponded area. Algonquin proposes to use a dry crossing method (i.e., flume or dam-and-pump) to install all but two of the waterbody crossings. The other two waterbodies would be crossed using the horizontal directional drill (HDD) method (Hudson and Still Rivers). Dry crossing methods typically result in lower sedimentation and associated turbidity impacts when compared to conventional wet crossing methods.

The Project would cross the Hudson River in New York and the Still River in Connecticut using the HDD method. Algonquin performed geotechnical feasibility studies at the proposed HDD sites and developed site-specific crossing plans for both of the crossings. Algonquin has also developed a *Best Drilling Practices, Monitoring, and Clean-up of Horizontal Directional Drilling Inadvertent Returns Plan* (BDP Plan) that describes the measures that would be taken to minimize the potential for inadvertent returns and releases at these two locations. Algonquin's implementation of the HDD method at the Hudson and Still Rivers would avoid in-stream disturbance of these waterbodies.

Several comments were received about the Project's potential to impact the watersheds that supply water to the New York City metropolitan area, including the Croton, the Catskill, and the Delaware Water Supply Systems. As with the existing pipelines in the area, the replacement pipeline would be located above the Catskill Aqueduct on concrete pads to provide adequate separation and protection for the aqueduct pipe. Algonquin is consulting with the New York City Department of Environmental Protection to develop a final crossing plan for the Catskill Aqueduct. Construction

activities would be conducted in accordance with Algonquin's *Erosion and Sediment Control Plan* (E&SCP), Spill Prevention Control and Countermeasure Plan, Unexpected Contamination Encounters Procedures, Rock Removal Plan, BDP Plan, and construction stormwater plans and permits. With these protection measures in place, construction and operation of the Project would not result in significant impacts on surface water resources, including the Croton, Catskill, and Delaware water supply systems.

Construction of the Project would impact 52.3 acres of wetlands, about 24.0 acres in New York and 28.3 in Connecticut. Of the total wetland acreage, about 35.3 acres (67 percent) would involve herbaceous and shrub-scrub wetlands, and the remaining 17.1 acres (33 percent) would involve forested wetlands. About 2.3 acres of the forested wetlands would be permanently converted to non-forested wetlands during operation of the pipeline facilities. The remaining 14.7 acres of forested wetlands would eventually revert to preconstruction conditions following construction. The Project would not result in any permanent loss of wetlands. In addition, two vernal pools would be located within the temporary construction area for the Project facilities in New York.

Construction and operation-related impacts on wetlands and vernal pools would be mitigated by implementing the wetland protection and restoration measures contained in Algonquin's E&SCP, Invasive Plant Species Control Plan, and any additional conditions of the wetland permits that could be issued by the USACE, New York State Department of Environmental Conservation (NYSDEC), and CTDEEP. Algonquin proposes to provide compensatory mitigation for the permanent conversion of forested wetlands to a non-forested wetland type. We are recommending that Algonquin develop a final Compensatory Mitigation Plan in consultation with the USACE, the NYSDEC, and the CTDEEP. We are also recommending that Algonquin identify any additional avoidance or mitigation measures for the two vernal pools through the permit review process with the applicable agencies, prior to construction.

Impacts on vegetation from the proposed Project would range from short-term to permanent due to the varied amount of time required to reestablish certain community types, as well as the maintenance of grassy vegetation within the permanent right-of-way and the conversion of aboveground facility locations to non-vegetated areas. Construction of the proposed Project facilities would temporarily disturb about 362.9 acres of vegetation (164.0 acres of open land and 198.9 acres of forested vegetation) and permanently affect 36.3 acres (8.3 acres of open land and 28.0 acres of forested vegetation). The Project would also affect vegetation communities of special concern, including chestnut oak forests. Algonquin would limit the amount of disturbance to chestnut oak forests by utilizing the existing pipeline right-of-way during construction to the extent possible. Overall, the Project would not contribute significantly to forest fragmentation because the proposed pipeline routes are located along existing rights-of-way and in areas that are already developed and highly fragmented.

The Project would affect wildlife and wildlife habitats, including migratory birds, along the pipeline route and at the aboveground facilities. Algonquin has minimized potential effects on significant or sensitive wildlife habitats by locating the majority of pipeline facilities within or adjacent to existing rights-of-way to the maximum extent possible. Algonquin would also use the HDD crossing method at the Hudson River crossing to avoid direct effects to the Hudson River Important Bird Area, aquatic habitats, and adjacent riparian habitats. Algonquin would implement its E&SCP and any permit conditions developed through consultation with the applicable federal and state agencies to minimize the effects of the Project on wildlife and their habitats. We find that these measures would minimize the effects of the Project on wildlife, including birds of conservation concern and other migratory birds. We are recommending that Algonquin obtain a FWS determination regarding migratory birds prior to construction.

Thirty-one of the Project waterbody crossings support fisheries of special concern. Eight waterbodies are waters with naturally occurring spawning populations of trout. One waterbody (the

Hudson River) contains threatened and endangered species and anadromous fisheries. Implementation of Algonquin's construction, restoration, and mitigation procedures would result in only limited, short-term impacts on fishery resources, and the aquatic habitats upon which these fishery resources depend. Invertebrate populations would recolonize the crossing area and all temporary construction workspace areas would revert to their original condition, including re-establishment of riparian cover. Furthermore, operation and routine maintenance of the pipeline rights-of-way are not expected to have any noticeable impact on fishery resources in the Project area.

Through consultation with National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), we have determined that the only waterbody crossing where essential fish habitat species could potentially occur is the Hudson River. Given the proposed use of the HDD construction method and the fact that no water would be withdrawn from the Hudson River to support Project construction, we conclude that the Project would have *no effect* on essential fish habitat or managed species. We have also determined that the Project would have no effect on marine mammals protected under the Marine Mammal Protection Act because they are not anticipated to occur within the Project area of the Hudson River.

Based on Algonquin's consultations with NOAA Fisheries and the U.S. Fish and Wildlife Service (FWS) and our review of existing records, nine federally listed threatened or endangered species are potentially present in the vicinity of the Project (as well as one candidate species and one species proposed for listing as endangered). Based on these consultations, we determined that the AIM Project would have *no effect* on the shortnose sturgeon, Atlantic sturgeon, piping plover, roseate tern, Puritan tiger beetle, northern red-bellied cooter, and small whorled pogonia; *may affect, but would not likely adversely affect* the bog turtle; and *would not likely jeopardize the continued existence* of the New England cottontail. Surveys are pending for the Indiana and northern long-eared bats. NOAA Fisheries concurred with this determination for the Atlantic and shortnose sturgeon and consultation is complete for these species. In compliance with section 7 of the Endangered Species Act, we request the FWS consider the draft EIS as the draft Biological Assessment for the AIM Project and request FWS concurrence for the species with *no effect* determinations. The final EIS will include a revised Biological Assessment to address the remaining species. To ensure compliance with the ESA, we are recommending that Algonquin not begin construction of the Project until the FERC staff receives comments from the FWS regarding the Biological Assessment and consultation is complete. Algonquin is also continuing to consult with the NYSDEC and CTDEEP regarding impacts on state-listed species. No state-listed species would be affected in Rhode Island or Massachusetts.

Algonquin conducted bald eagle surveys for the Hudson River crossing area and identified wintering eagles. No bald eagle nests were observed in the Project area or within 0.5 mile of the Project. Algonquin would continue to consult with the FWS and NYSDEC to discuss survey results, and develop and implement appropriate avoidance and mitigation measures, including timing restrictions, as necessary, to avoid impacts on bald eagles both nesting and wintering within the Project area.

Construction of the Project would impact about 592.3 acres. About 76 percent of this acreage would be utilized for the pipeline facilities, including the construction right-of-way (64 percent) and additional temporary workspace (12 percent). The remaining acreage impacted during construction would be associated with aboveground facilities (16 percent), pipe and contractor ware yards (7 percent), and access roads (less than 1 percent). The primary land use types impacted during construction would be forest/woodland (34 percent), open land (28 percent), industrial/commercial land (26 percent), and residential land (9 percent). Agricultural land and open water would make up the remaining 3 percent of land types impacted during construction of the proposed Project.

Following construction, about 46.0 acres of new land outside of Algonquin's existing permanent right-of-way would be permanently encumbered by operation of the Project. About 82 percent of this acreage would be for the new pipeline right-of-way, 14 percent for aboveground facilities, and 4 percent for new permanent access roads. The primary land use types that would be permanently encumbered by new easements would be forest/woodland (61 percent), open land (18 percent), industrial/commercial land (11 percent), and agricultural land (6 percent). Open water and residential land would make up the remaining 4 percent of new permanent impacts.

Algonquin's proposed construction work areas would be located within 50 feet of 337 residential structures (i.e., houses and apartment buildings) and 95 non-residential structures (i.e., commercial or industrial facilities, sheds, garages). To address impacts on residences, Algonquin developed Residential Construction Plans to inform affected landowners of proposed measures to minimize disruption and to maintain access to the residences during construction. We have reviewed the Residential Construction Plans and do not find them acceptable. We are recommending that Algonquin provide a revised set of Residential Construction Plans that incorporate and address any comments received from affected landowners and also incorporate additional measures to minimize effects prior to construction.

In general, Project impacts on recreational and special interest areas would be temporary and limited to the period of active construction, which typically lasts several weeks or months in any one area. These impacts would be minimized by implementing the measures in Algonquin's E&SCP, traffic management plans, our recommended Fugitive Dust Control Plan, as well as measures to ensure that noise is mitigated. In addition, we are recommending that Algonquin develop site-specific measures to further minimize impacts on St. Patrick's Church in Verplanck, New York; the Buchanan-Verplanck Elementary School in New York; Dodd Stadium in Norwich, Connecticut; the Norfolk Golf Club in Westwood, Massachusetts; Gonzalez Field in Dedham, Massachusetts; and St. Theresa of Avila School in West Roxbury, Massachusetts.

To address traffic impacts related to road crossings and in-street construction in densely populated areas, Algonquin has prepared separate Traffic Management Plans for the West Roxbury Lateral in Massachusetts and pipeline segments in New York. The plans include measures to address motor vehicles, parking, and considerations for pedestrians, bicycles, and construction workers. We have reviewed these plans and found them acceptable with the exception of a portion of the Traffic Management Plan for the New York pipeline segments. Therefore, we are recommending that Algonquin provide a revised plan that includes the site-specific details for several road crossings prior to construction. Impacts on traffic during construction along the West Roxbury Lateral would result in significant adverse impacts at one intersection. However, with the implementation of Algonquin's Traffic Management Plan for the West Roxbury Lateral, impacts resulting from in-street construction would be minimized to the extent possible and would be reduced to less than significant levels at all other locations along the West Roxbury Lateral.

Construction of the Project would result in minor beneficial socioeconomic impacts due to increases in construction jobs, payroll taxes, purchases made by the workforce, and expenses associated with the acquisition of material goods and equipment. Operation of the Project would have a minor to moderate positive effect on the local governments' tax revenues due to the increase in property taxes that would be collected from Algonquin.

Algonquin conducted archival research and walkover surveys of the proposed Project area to identify historic aboveground properties and locations for additional subsurface testing in areas with potential for prehistoric and historic archaeological sites. Algonquin then conducted field surveys for aboveground properties and archaeological sites. Algonquin identified a total of 42 archaeological sites within the Project's area of potential effect. Of these, 27 require additional testing to determine eligibility

for listing on the National Register of Historic Places (NRHP); 13 are not eligible; 1 is eligible for listing but would be avoided by the Project; and 1 is listed on the NRHP but would also be avoided by the Project. In addition, 387 historic aboveground resources were identified within the area of potential effect, the majority of which (358) are not eligible for listing on the NRHP and no further work is recommended. Of the remaining resources, effects to one (Letchworth Village Cemetery) have yet to be determined and are pending additional evaluation. The Project would not result in any significant or adverse effects on the remaining identified historic aboveground resources. To ensure that our responsibilities under section 106 of the National Historic Preservation Act are met, we are recommending that Algonquin not begin construction until any additional required surveys are completed, remaining survey reports and treatment plans (if necessary) have been reviewed by the appropriate parties, and we provide written notifications to proceed.

We consulted with nine federally recognized Indian tribes to provide an opportunity to identify any concerns about properties of traditional religious or cultural significance that may be affected by this undertaking. Eight of the tribes have contacted FERC staff to express an interest in the Project, request additional information, request to be kept apprised of the Project, and/or to accompany the archaeological field crews. Consultations with several other governmental organizations, non-governmental organizations, non-federally recognized tribes, and municipal historic preservation commissions in New York and Massachusetts were also conducted to provide them an opportunity to comment on the Project.

Air quality impacts associated with construction of the Project would include emissions from fossil-fueled construction equipment and fugitive dust. Such air quality impacts would generally be temporary and localized, and are not expected to cause or contribute to a violation of applicable air quality standards. Because the Project would cross many roads, would occur near many residences, and is located in a particulate matter maintenance area, we have recommended that Algonquin develop a Fugitive Dust Control Plan to further mitigate dust.

Due to modifications on existing equipment and/or removal of existing compressors, the potential emissions of most pollutants at the Stony Point and Southeast Compressor Stations would be reduced from their current potential levels. Further, based on the identified estimated emissions from operation of the proposed Project facilities and review of the modeling analysis for all compressor stations, the Project would result in continued compliance with the National Ambient Air Quality Standards, which are protective of human health, including children, the elderly, and sensitive populations. Therefore, with the mitigation measures proposed by Algonquin, we do not anticipate that construction and operation of the proposed Project facilities would have a significant impact on air quality in the Project area or in the region itself. Because the design of the modifications to several M&R stations is not yet complete, we are recommending that Algonquin provide an update regarding the air permitting requirements associated with the modifications to the M&R stations in New York, Connecticut, and Massachusetts.

Noise would be generated during construction of the pipeline and aboveground facilities. Noise impacts during construction would be highly localized and attenuate quickly as the distance from the noise source increases. The one exception to this would be certain HDD activities at the Hudson River and Interstate 84/Still River crossings. Algonquin would implement mitigation at all proposed HDD entrance locations to reduce the predicted noise generated by the HDD operations below the FERC noise requirement of 55 decibels on an A-weighted scale – day/night average at the closest noise sensitive areas.

The modified compressor stations would generate noise on a continuous basis (i.e., 24 hours per day) once operating. Some noise would also be generated by the operation of M&R stations and the proposed mainline regulators. We reviewed the compressor station noise analyses and agree that, if properly implemented, the noise control measures would ensure that noise attributable to the modified



compressor stations would be less than the FERC noise requirement at nearby noise sensitive areas. However, where the noise currently attributable to the compressor station is greater than our noise requirement, the noise attributable to the station modifications would cause no perceptible change to station noise levels. To ensure that the actual noise levels produced at the aboveground facilities are not significant, we are recommending that Algonquin submit operational noise surveys and add noise mitigation, as necessary, until noise levels are below our acceptable thresholds.

The pipeline and aboveground facilities associated with the AIM Project would be designed, constructed, operated, and maintained to meet or exceed the Pipeline and Hazardous Materials Safety Administration's Minimum Federal Safety Standards in 49 CFR 192 and other applicable federal and state regulations. The regulations include specifications for material selection and qualifications; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. By designing and operating the Project in accordance with the applicable standards, the Project would not result in significant increased public safety risk.

We received several scoping comments concerning the safety of the Project and its proximity to the Indian Point Energy Center (IPEC), a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Algonquin identified that because of the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that it would implement, the proposed route would not pose any new safety hazards to the IPEC facility. Based on our consultation with the Nuclear Regulatory Commission, Entergy Nuclear Operations, Inc. (Entergy) is required to assess any new safety impacts on its IPEC facility and that analysis is provided to and reviewed by the Nuclear Regulatory Commission. Algonquin has coordinated with Entergy to provide information about its proposed pipeline and Entergy is currently performing a Hazards Analysis. To ensure that the AIM Project would not present new safety hazards to the IPEC facility, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.

We also received several comments expressing safety concerns about potential interactions between Algonquin's proposed pipeline facilities and the West Point Partners' transmission line. Algonquin has committed to conduct an alternating current/direct current (AC/DC) interference study and incorporate field surveys and comprehensive modeling to identify potential adverse effects on the pipeline from stray currents. Although pipelines are routinely sited adjacent to electric transmission lines, we are recommending additional information to ensure that safety concerns about potential AC/DC interactions are adequately addressed. This includes receiving Algonquin's AC/DC interference study associated with the West Point Transmission Project and documentation of all consultations with West Point Partners, as well as any additional mitigation measures addressing safety-related issues or conflicts identified in the study.

We received numerous comments during scoping for the Project about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus shale region. Activities associated with Marcellus shale development would occur outside of the Project area's region of influence. As a result, the local resources that may be affected by Marcellus shale development would not be affected by the Project, and local resources affected by the Project would not be affected by development in the Marcellus shale region. Impacts associated with the proposed Project in combination with other projects identified within the region of influence would be relatively minor overall. We have included recommendations in the EIS to further reduce the environmental impacts associated with the AIM Project, as summarized in section 5.2. Additionally, Algonquin selected a route that collocates with existing rights-of-way where feasible. Therefore, we conclude that the cumulative impacts associated with the AIM Project, when combined with other known or reasonably foreseeable projects, would be effectively limited.

## **ALTERNATIVES CONSIDERED**

The No Action Alternative was considered for the Project. While the No Action Alternative would eliminate or delay the short and long-term environmental impacts identified in this EIS, Algonquin would be unable to supply an additional 342,000 dekatherms per day of natural gas to its existing mainline system; increase deliveries to the Project shippers at existing delivery points in southern New England; or provide three new delivery points for the Project shippers. We also considered the use of alternative energy sources and the potential effects of energy conservation, but these measures similarly would not satisfy the objectives of the Project, provide an equivalent supply of energy, or meet the demands of the Project shippers. We concluded that the No Action Alternative, alternative energy sources, and energy conservation were not viable alternatives to the proposed Project in the required timeframe.

Our analysis of system alternatives included an evaluation of the existing Tennessee Gas Pipeline and Iroquois Gas Transmission systems as well as the planned Connecticut Expansion and Northeast Energy Direct Projects. None of the existing, proposed, or planned natural gas pipelines reach the delivery points required by the Project shippers in southern New England. To provide service to these delivery points, the existing and planned systems would need to be modified by constructing hundreds of miles of new pipeline, much of which would duplicate the existing Algonquin system. This would result in greater environmental impacts than the Project. Consequently, none of the system alternatives provide an environmental advantage over the proposed Project.

We evaluated Algonquin's proposed design for the Project to determine if any alternative designs would be feasible and environmentally preferable to the Project. We determined that alternative designs would result in operational inefficiencies associated with flow characteristics of natural gas within the system, and would shift, but not avoid, environmental impacts from one location to another. For these reasons, we concluded that alternative designs would not be practical or provide an environmental advantage over the proposed Project.

We also considered the feasibility of electric-driven compressor units in lieu of gas-fired units at each of the existing compressor station sites. We concluded that use of electric-driven compressor units would result in additional environmental impacts due to the installation of non-jurisdictional facilities such as electric transmission lines and substations. Although electric-driven units would result in lower operating emissions, Algonquin would be required to comply with its existing air permits at each site. For these reasons, electric-driven compressors would not be preferable to or provide a significant environmental advantage over the proposed Project.

We evaluated route alternatives for the Hudson River crossing and for the West Roxbury Lateral; several minor route variations along different segments of the Project; and site alternatives for M&R stations at the new delivery points in Connecticut and Massachusetts. We determined that none of the route or site alternatives would offer significant environmental advantages over the Project.

## **MAJOR CONCLUSIONS**

We determined that construction and operation of the Project would result in some adverse environmental impacts but most impacts would be reduced to less-than-significant levels. This determination is based on a review of the information provided by Algonquin and further developed from environmental information requests; site visits; scoping; literature research; alternatives analyses; and contacts with federal, state, and local agencies, and other stakeholders.

Although many factors were considered in this determination, the principal reasons are:

- About 35.1 miles (93 percent) of the 37.6 miles of AIM Project pipeline facilities would be within or adjacent to existing rights-of-way, consisting of Algonquin pipeline rights-of-way, public roadways, railways, and electric transmission line corridors.
- The majority of the pipeline facilities (70 percent) would replace existing Algonquin pipelines within existing rights-of-way.
- Algonquin would minimize impacts on natural and cultural resources during construction and operation of the Project by implementing its E&SCP; Spill Prevention, Control and Countermeasure Plan; Unexpected Contamination Encounter Procedures; Invasive Plant Species Control Plan; BDP Plan; Compensatory Mitigation Plan; Residential Construction Plans; Traffic Management Plans for New York and the West Roxbury Lateral; and *Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains*.
- Algonquin would utilize the HDD method to cross the Hudson and Still Rivers, which would avoid any direct impacts on these resources.
- We would complete Endangered Species Act consultations with the FWS prior to allowing any construction to begin.
- We would complete the process with section 106 of the National Historic Preservation Act and implementing the regulations at 36 CFR 800 prior to allowing any construction to begin.
- We would ensure compliance with all mitigation measures that become conditions of the FERC authorizations and other approvals during our oversight of an environmental inspection and mitigation monitoring program

In addition, we developed site-specific mitigation measures that Algonquin would implement to further reduce the environmental impacts that would otherwise result from construction of its Project. We determined that these measures are necessary to reduce adverse impacts associated with the Project, and in part, are basing our conclusions on implementation of these measures. Therefore, we are recommending that these mitigation measures be attached as conditions to any authorization issued by the Commission. These recommended mitigation measures are presented in section 5.2 of the draft EIS.

**APPENDIX S**  
**LIST OF PREPARERS**



**APPENDIX S  
LIST OF PREPARERS**

**Federal Energy Regulatory Commission**

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**APPENDIX S**  
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**MICHELLE WU**  
**BOSTON CITY COUNCIL**

**Docket #CP14-96-000**

September 16, 2014

Members of FERC,

I write to you regarding my concerns and the concerns of my constituents about the Algonquin Pipeline expansion (AIM) project, specifically the five mile spur that travels through the town of Dedham and into the Boston neighborhood of West Roxbury. Over the last nine months, I've learned of this proposal in bits and pieces from my constituents, from Spectra's community meeting on September 3, 2014, and from FERC's public comment session on September 8, 2014. My concerns fall into four general categories: safety, construction impacts, the necessity of the five mile spur, and the lack of public awareness of this project.

**Safety:** The proposed route of a West Roxbury Lateral down Centre Street would run extremely close to the active quarry owned by West Roxbury Crushed Stone at 10 Grove Street and the proposed metering station across the street from the quarry. While proponents have stated to the abutters of the pipeline that these factors do not create increased chances of leaks or explosions, I believe that this proposed route and metering station creates an unnecessary risk that could easily be mitigated by altering the route. As it stands, the residents of Dedham and West Roxbury carry the brunt of the risks associated with the entire Algonquin Pipeline proposal, as 64% of all residential areas and 54% of all commercial areas that the pipeline passes through lie in West Roxbury and Dedham. These are overwhelming numbers, and I share deeply in my constituents' concerns for safety and disproportionate risk..

**Construction Impacts:** If the proposed West Roxbury Lateral is approved, the construction impacts will be felt by residents across West Roxbury, hitting direct abutters hardest. Grove and Centre Streets are two lane roads that are heavily frequented by motor vehicle traffic. Any lane closures, no matter the length of time, disrupt the quality of life of neighborhood residents. Therefore, construction and the subsequent lane closures should be undertaken only when they are completely necessary, and no information I have in regard to this project has indicated such a requirement.

**Necessity of the spur:** As mentioned, I have concerns regarding the necessity of the proposed five mile spur known as the West Roxbury Lateral. When one looks at Spectra's overall proposal, it becomes apparent that the West Roxbury Lateral represents a small fraction of the pipeline and is not an essential or necessary piece of it overall. We have been told that the Lateral is a response to a request from National Grid for increased capacity, citing demand from customers. I contend that the concerns of the direct abutters of this proposal, as well as those of the West Roxbury neighborhood at large should be weighed equally if not more heavily than the gas company that will distribute this product throughout the immediate region.

BOSTON CITY HALL, ONE CITY HALL SQUARE, BOSTON, MASSACHUSETTS, 02201  
617-635-3115 • FAX: 617-635-4203 • MICHELLE.WU@BOSTON.GOV



**MICHELLE WU**  
**BOSTON CITY COUNCIL**

Lack of public awareness: Finally I ask that FERC extend the comment period past September 29, 2014, so the residents of West Roxbury who wish to learn more about the proposed West Roxbury Lateral and give feedback have ample time to do so. Prolonging the comment period would increase community input and allay some of the continued concerns my constituents and I share around lack of public awareness regarding this process and project.

I appreciate the opportunity to voice my concerns around Spectra's proposed West Roxbury Lateral and look forward to a productive and inclusive process regarding the future of this proposal. Until or unless such a process occurs, I cannot support this pipeline project based on the current information available.

Sincerely,

Michelle Wu  
Boston City Councilor At-Large

Document Content(s)

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UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

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Algonquin Gas Transmission, LLC  
Algonquin Incremental Market Project

Docket No. CP14-96-000  
PF13-16-000

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**MOTION TO INTERVENE OF REYNOLDS HILLS, INC.**

On August 6, 2014, the Federal Energy Regulatory Commission ("FERC") issued a Draft Environmental Impact Statement (the "Draft EIS") for the proposed Algonquin Incremental Market Project (the "Project"), FERC Docket No. CP14-96-000. Algonquin Gas Transmission LLC ("Algonquin"), a wholly owned subsidiary of Spectra Energy Partners, LP ("Spectra"), seeks, among other things, authorization to construct up to 42-inch diameter pipelines and all appurtenant facilities as well as stations in New York, Connecticut, Rhode Island and Massachusetts.

Pursuant to 18 C.F.R. § 157.10 and 18 C.F.R. § 385.214, Reynolds Hills, Inc. ("Reynolds Hills"), by and through their President, Nancy S. Vann, respectfully moves for the Commission to grant intervention in the above-captioned matter. The proposal will modify, expand, and construct a large gas pipeline that already runs along and through Reynolds Hills. The proposal would negatively impact our environment by impacting a wetland on our property, exposing us to airborne contaminants in a non-attainment area under the Clean Air Act, and would forever alter our community because our property abuts and is transected by the significant changes proposed for the pipeline route. The proposal would cause environmental damage to our property and would negate the reason for our community's existence – an environmental aesthetic and place to commune with nature and friends in a small community in northern Westchester County.

We timely file this motion to intervene and to oppose the pipeline's proposed modifications and route within the public comment period for the *Draft EIS*. The comment period ends on September 29, 2014, and thus, the Commission must deem the intervention to be filed timely, in accordance with both 18 C.F.R. § 157.10 (a)(2) and 18 C.F.R. § 385.214. Reynolds Hills intends to timely file substantive comments on the Draft EIS for the above referenced application.



## **I. COMMUNICATION AND CORRESPONDENCE**

Service in this proceeding should be made upon, and communications should be directed to the following persons:

Nancy S. Vann,  
President, Reynolds Hills, Inc.  
201 Union Avenue  
Peekskill, New York 10566  
nancy\_vann@hotmail.com

## **II. INTERVENOR**

Reynolds Hills is a non-profit summer bungalow community located in the City of Peekskill and in the Town of Cortlandt, both in Westchester County, New York. As property owners, we are concerned about the environmental impact of this proposed 42-inch-diameter high-pressure natural gas pipeline project. The pipeline currently runs adjacent to and through our property, which will be significantly negatively impacted by the proposed construction, maintenances, and expansion of the pipeline.

Our historic bungalow community was established in 1929 and pre-dates the existing and proposed pipeline by over two decades. There are seventy-two (72) individual cottages, a community social hall, a swimming pool, a tennis court, a stream and an area of separate community gardens. Much of the Reynolds Hills property is undisturbed woodlands and mature wetlands. Most, but not all of the cottages in our community are three-season homes; some occupied only on weekends, but many occupied full time between April 1st and November 15th. Several are year-round residences. Members of the community include descendants of the original founders, young families, hikers, kayakers, gardeners and senior citizens seeking an undisturbed place to enjoy nature. Our community rules have been established to protect the currently existing natural and historic nature of our property - and under these rules, no further development is permitted.

## **III. GROUNDS FOR INTERVENTION**

Reynolds Hills is extremely concerned about the negative environmental impacts identified in the *Draft EIS* for Algonquin's application and about the significant environmental impacts that were not addressed by the *Draft EIS*. Our community and its members will be directly impacted by the Project that will run across our property.



## Safety

The roads within Reynolds Hills are single lane roads and the ravine and wetlands are not readily accessible from our entry road, which would make it nearly impossible to deploy any firefighting effort there. Since a fire along the pipeline near our homes, whether during or after construction, would not be accessible to firefighting equipment due to its unique and somewhat hidden location, it would be disastrous for any of our members that were in the community at the time of such an incident. In addition, any fire would be a major threat to the seventy-two (72) houses and the other structures in our community, the woodlands habitat that is around and between them, and the natural wetland and brook area.

There have been a number of pipeline disasters in the current decade alone. A 2010 natural gas line explosion in San Bruno, California killed eight people and damaged or destroyed dozens of homes. Reynolds Hills is concerned that adequate steps have yet to be identified or proposed to prevent such an accidental occurrence on or near our unique property.

The new 42" diameter, high-pressure gas pipeline will be in addition to the three already existing pipelines that cross under the Hudson River from Rockland County to Westchester County. The new pipeline would intersect underground in close proximity to the Indian Point nuclear power plant (that has 40 years of spent nuclear fuel rods currently housed in "temporary" spent fuel pools without radiation shielding and without adequate fire suppression abilities to stop a gas pipeline explosion), is near the Ramapo and Stamford-Peekskill earthquake fault lines, and will intersect with one (possibly two) proposed high voltage power lines. The higher volume and pressure of the natural gas and its proximity to Indian Point would also increase the risks of nuclear incidents in the Reynolds Hills' community area particularly because there is no effective evacuation strategy for such a fast moving nuclear accident triggered by a pipeline explosion and subsequent fire. These and other Indian Point issues were not addressed in the *Draft EIS*.

## Environment

The proposed pipeline expansion, maintenance and construction will directly impact our community because it will require work in, around, and over, our wetland area. The wetland has significant environmental values, particularly to our community, and provides supporting habitat and ecological and biodiversity benefits for our woodlands. The wetland is in a ravine and borders Dickey Brook. Construction in the wetland would have an impact on the brook as well, which is vital to our homes and our community because of the ecosystems services that it provides such as storm drainage and very importantly flood control which is more necessary than ever because of the extreme weather witnessed in our area due to a changing climate (*e.g.*, Hurricane Sandy and Tropical Storm Irene).



During heavy rains, the current character of our wetland will be negatively impacted by the proposal. We expect that runoff and silt would lead to additional flooding of Dickey Brook, further impacting our wetlands and making our community's single entry road impassable. The flooding of public roads would also be exasperated. Sedimentation, erosion, and potential contamination of Dickey Brook and our wetlands during construction will lower water quality. Additionally, compaction of our soil will reduce the ability for water to recharge groundwater supplies and expanding the pipeline will create a new conduit for water through the gravel surrounding the pipeline, altering the hydrologic pattern and degrading the quality and quantity of the water in the area. There has been no adequate or comprehensive analysis performed on these impacts to our wetlands in the Draft EIS.

During construction, the peace and enjoyment that are the reasons for Reynolds Hills' existence would be seriously disrupted. The disruptions will likely impact the species of flora and fauna that rely upon our wetland and likely lead to the departure of many of the species, including any protected species, that are now such an important part of our environment. The construction impacts to the ecosystem would take decades to restore, and the applicant's plans are unclear at best. These issues – disruption and post-construction activities of the applicant – have not been adequately addressed in the *Draft EIS*.

### **Health Risks Related to Air Emissions**

Reynolds Hills is also concerned about methane emissions and air contaminants from the pipeline and from the metering and regulating station across Route 9 from our community. There are documented problems with valves that Spectra energy uses in gas infrastructure projects. Methane emissions from shale gas infrastructure projects are recognized as a significant radon hazard and may contain benzene, toluene, formaldehyde and many other chemicals. Health impacts associated with emissions include nosebleeds, visual impairment, neurological and respiratory problem, leukemia, aplastic anemia, lung, liver, kidney and cardiovascular disease. The elderly and health-compromised populations of our community are particularly vulnerable.

The Westchester County area where the pipeline is located is currently a marginal non-attainment area under the Clean Air Act eight (8) hour ozone standard. For all of these potentially significant health issues for residents of our community, a formal Health Impact Assessment (HIA), as outlined by the Centers for Disease Control, should be conducted and included in a Supplemental Draft Environmental Impact Statement and provided for our review. Further, the failure to adequately address air emission and air permitting issues in the *Draft EIS* is a basis for our request for additional time, at least 90 days for comments on a Supplemental Draft Environmental Impact Statement, prior to issuing a Final Environmental Impact Statement.

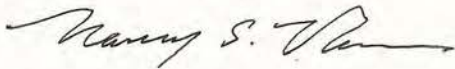
#### IV. CONCLUSION

Reynolds Hills has considerable interest in protecting the health of our members and the environmental impacts to our property – the very property of the proposed expansion, construction, and maintenance for the proposed Project. The small community nature of Reynolds Hills, the proposed destruction of its vital wetlands , and the location of metering and regulating infrastructure in close proximity are issues that have not been adequately addressed in the *Draft EIS*.

Reynolds Hills has a clear interest that may be directly affected by the outcome of the proceeding and meets the regulatory requirements to intervene set forth in 18 C.F.R. § 157.10(a)(2) and 18 C.F.R. § 385.214(b)(2)(ii) and (iii). No other party in this proceeding will be able to adequately protect these interests and the implications are substantial to our community as demonstrated by the inadequate *Draft EIS*. Accordingly, Reynolds Hills has the necessary direct and substantial environmental interest in the outcome of this process.

For the reasons set forth above, Reynolds Hills respectfully requests that this Motion to intervene be granted and that we be permitted to participate, with the full rights of a party, in the above-captioned proceeding before FERC.

Respectfully Submitted,



Nancy S. Vann  
President, Reynolds Hills, Inc.  
201 Union Avenue  
Peekskill, New York 10566

marty walsh, peekskill, NY.

to whom it may concern, i am very much against the proposed algonquin pipeline expansion. i was initially open minded to it, but after extensive research and listening to the arguments both pro and con ive come to the conclusion that it would be a huge mistake to go ahead with the project. they are not only under insured, but it also hasnt been shown to me that the project can be performed safely



Document Content(s)

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# **STOP THE ALGONQUIN PIPELINE EXPANSION!**

29 Highland Rd.  
Rye, NY 10580

September 27, 2014

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1  
Washington, DC 20426

**RE: Algonquin Incremental Market (“AIM”) Project:  
FERC Docket No. CP14-96-000**

Dear Secretary Bose:

Please accept the following comments on behalf of Intervenors Stop the Algonquin Pipeline Expansion (“SAPE”), on the Draft Environmental Impact Statement (“DEIS”) for the proposed Algonquin Incremental Market (“AIM”) Project (“Project”), particularly as it affects the counties of Rockland, Westchester and Putnam in New York State. As an Intervenor in these proceedings, SAPE urges the Federal Energy Regulatory Commission (“Commission” or “FERC”) to withdraw the DEIS and take no further action on the application until all of the matters set forth in these comments are addressed in a revised DEIS.

For the reasons explained below, the DEIS is inadequate as a National Environmental Policy Act (“NEPA”) document and a revised DEIS must be prepared with a new period for review and public comment on the proposed project to ensure that the Commission satisfies its obligations under NEPA.

**I. The Time Period Designated to Submit Comments on the DEIS is Wholly Insufficient, Violates the Public Right to Meaningful Participation, and is Contrary to the Express Purpose of NEPA**

While SAPE appreciates the additional nine (9) days that the Commission has given to the public for comment—extending the original comment period from August 6, 2014 to September 29, 2014—a comment period of just over fifty (50) days is still wholly insufficient time to properly review the DEIS and provide substantive and useful comment given the enormity and complexity of the proposed Project. The Commission should have at least doubled the comment period for a project of this scale. The DEIS

and its exhibits total well over 1,000 pages—including appendices—and discuss complex technical and scientific information, including engineering, ecological and environmental studies and data upon which the Commission relies to justify its conclusions.

To meet the proposed Project’s goals, the public should be provided appropriate time to allow for meaningful review of this lengthy DEIS with all its complexity. In that way, the public can adequately assess the study of methodologies, assumptions made and conclusions made before providing the type of meaningful comments to the Commission that NEPA expects. SAPE notes that a coalition of elected officials<sup>1</sup> recently sent a letter to the Commission requesting that the DEIS be withdrawn and a revised DEIS be released when all the missing information is complete, and that a ninety (90) day public comment period commence at that time.

Further, for many who attended the scheduled public meetings over the past week, the meetings represented the only opportunity to have their voices heard on their legitimate concerns regarding the proposed Project. The limited amount of time provided to the public for comment on the DEIS suggests that the Final EIS has already been written and that the Commission is merely going through the motions to create an illusion of meaningful public participation.

## **II. The DEIS is Grossly Incomplete and Premature**

Virtually no aspect of the DEIS is complete; its deficiencies are pervasive and substantial. Taken together they deprive the public of a meaningful opportunity to comment on the proposed plans and fail to impose enforceable mitigation prior to permitting. Significant omissions addressed in the DEIS include, but are not limited to, the following:

- Final conclusion on safety-related conflicts with the Indian Point Energy Center (“IPEC”) not provided (Section 4.12.3);
- Field Sampling Plan for potential soil contamination not provided (Section 4.2.2.6);

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<sup>11</sup> To date, the list of politicians that have signed-on to that letter requesting additional time to review and comment on the DEIS includes, but is not limited to: New York State Senator Andrea Stewart-Cousins; New York State Senator George Latimer; Assemblyman Tom Abinanti; Assemblyman David Buchwald; Assemblywoman Sandy Galef; Assemblywoman Shelley Mayer; Assemblyman Steve Otis; Westchester Legislator Catherine Borgia; Westchester Legislator Peter Harckham; Westchester Legislator Michael Kaplowitz; Westchester Legislator Catherine Parker; Westchester Legislator MaryJane Shinsky; Westchester Legislator Lyndon Williams; Putnam Legislator Carl Albano; Putnam Legislator Sam Oliverio; Rockland Legislator Harriet Cornell; Buchanan Mayor Theresa Knickerbocker; Cortlandt Town Supervisor Linda Puglisi; Peekskill Mayor Frank Catalina; Buchanan Town Board Member Duane Jackson; Cortlandt Town Board Member Debbie Costello; Cortlandt Town Board Member Seth Freach; Peekskill City Council Member Drew Claxton; Peekskill City Council Member Kathleen Talbot; Peekskill City Council Member Vinnie Vesce; North Salem Town Board Member Amy Rosmarin; Ossining Town Board Member Victoria Gearity; Yorktown Town Board Member Nick Bianco; Yorktown Town Board Member Visnu Patel.

- Insufficient analysis of impacts to vernal pools in New York (Section 4.4.3.2);
- Non-saturated wetlands not identified (Section 4.4.4);
- Compensatory Mitigation Plan not prepared (Section 4.4.5);
- Tree survey of Harriman State Park not complete (Section 4.6.1.5);
- Alternatives for the Hudson River crossing not prepared (Section 4.4.3);
- Final plans for the Catskill Aqueduct crossing not developed (Section 4.3.2.1);
- Plans for to address trench dewatering not developed (Section 4.3.2.6);
- Survey for the presence of the Indiana bat not complete (Section 4.7.1.2);
- Survey for the presence of the northern long-eared bat not complete (Section 4.7.1.3);
- Incomplete information on impacts to migratory birds (Section 4.7.2);
- Incomplete information on impact to bald eagles (Section 4.7.3);
- Survey for the presence of Timber Rattlesnakes not complete (Section 4.7.5.1);
- NYSDOS approval of consistency assessment for Hudson Crossing (Section 4.8.4.1);
- Design modifications for New York M&R stations not complete (Section 4.11.1.2);
- Site Specific construction plan for St. Patrick Church not provided (Section 4.8.5.1);
- Site Specific construction plan for Buchanan-Verplanck Elementary not provided (Section 4.8.5.1).

These omissions go to the very heart of the question of whether the proposed Project can or should be constructed. By providing a wholly incomplete DEIS for public comment, FERC has put the public and members of SAPE in an uncertain position. Undoubtedly, the permitting of this Project should not be considered further until all of the documents and information identified on the face of the DEIS are completed and made available for review and public comment. Until this occurs, the DEIS is premature and must be withdrawn.



### **III. The Project Poses A Significant Threat to Public Health and Safety.**

The transmission of highly flammable natural gas creates significant risks of loss of life and major property damage. The greatest hazard is a fire or catastrophic explosion following a major pipeline rupture. The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration reports that in the past 20 years alone, on-shore gas transmission incidents have caused 41 fatalities, 195 injuries requiring in-patient hospitalization and over \$1.7 billion in property damage.<sup>2</sup>

Safety is of paramount concern to SAPE members because the proposed Project plans to replace an existing 26-inch diameter pipeline with 42-inch diameter high-pressure pipelines and to add an additional 42-inch diameter high-pressure segment across the Hudson River entering a highly populated, high risk area in Cortlandt, New York in Westchester County. As a result, the Project will allow significantly greater amounts of combustible natural gas to flow through the infrastructure, thereby presenting greater risk of hazard to the public.

FERC's conclusion that the Project will have no significant environmental impacts is unsupportable where virtually no aspect of the DEIS is complete. The public has the right to know with certainty what environmental impacts of the proposed Project will be. This is particularly true where the Project raises significant health and safety concerns that have not been sufficiently addressed in the DEIS.

#### **A. Indian Point Energy Center ("IPEC") ("Indian Point")**

A site that is of particular concern to SAPE members is the Indian Point Energy Center ("IPEC") ("Indian Point") in Buchanan, New York, located in close proximity to the proposed Project route. There are three existing gas pipelines that run under the Hudson River in Algonquin's Right-of-Way and abut the IPEC security barrier. The proposed route of the new 42-inch diameter high-pressure segment would be 0.5 miles south of the existing Right-of-Way, and would cross a portion of IPEC land less than a mile from the IPEC-protected security barrier around the main facility.

Title 10 to the Code of Federal Regulations ("C.F.R.") requires that nuclear power plants be appropriately protected against the dynamic effects and conditions that may occur outside the nuclear power plant. These events include the effects of explosion of hazardous material that may be associated with nearby industrial activities such as transportation routes such as pipelines. Since the Project's proposed route passes within the confines of the IPEC site the requirements of 10 C.F.R. §100.20 should have been considered in the DEIS.

Based almost entirely on data contained in Table 4.12.3-1 ("Existing or Potential Impact Range for the AIM Project"), the DEIS concludes that the proposed Project should not pose any new safety hazards to IPEC. However, this analysis falls short of

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<sup>2</sup> Stakeholder Communications, US DEPT OF TRANS PIPELINE AND HAZ SAFETY ADMIN:  
<http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html?nocache+970#ngtrans>.

adequately addressing the safety-related risk of a major failure of a high-pressure natural gas pipeline in close proximity to IPEC. This failure cannot be ignored where other publicly available evaluations of natural gas pipeline hazards have concluded that a 16-inch diameter natural gas pipeline (at 50 psi) posed an undue risk to a nuclear enrichment center.<sup>3</sup> In light of these potential dangers, the proposed Project's 42-inch diameter pipeline (at 850 psi) plainly poses an unacceptable risk to IPEC.

While we are pleased that FERC has addressed its concern regarding a pipeline explosion near the IPEC facility, its analysis of the safety-related information in connection with the Project's proximity to IPEC is woefully inadequate. Notably, for example, Algonquin is still awaiting receipt of a Hazards Analysis being performed by Entergy. Without an opportunity to review that Hazards Analysis, Algonquin has not made any final conclusions with regard to the safety of its proposed pipeline in the vicinity of IPEC. The absence of final conclusions regarding potential safety-related conflicts with IPEC suggests at the very least that the proposed Project requires additional analysis. The DEIS also fails to fully consider the risk due to seismic activity in the project area and fails to fully analyze the adequacy of Algonquin's emergency response procedures to a major explosion in the vicinity of IPEC.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file its final conclusions regarding any potential safety-related conflicts with IPEC based on the Hazards Analysis currently being performed by Entergy. SAPE respectfully requests that at minimum, Algonquin must be *required* to file its final conclusions regarding those potential safety-related conflicts and that Algonquin must make all further communication regarding potential safety-related conflicts with IPEC available to the public for review and comment.

The absence of any complete information on potential safety-related conflicts with IPEC deprives the public of a meaningful opportunity to comment on the proposed Project. A Supplemental DEIS must be prepared for review and public comment to analyze potential safety-related conflicts with IPEC. *See* Section 4.12.3.

## **B. Existing/Unknown Contaminated Sites**

It is anticipated that the Project will traverse parts of New York State that are in close proximity to existing hazardous sites and facilities. In New York alone, the DEIS identifies three properties where a release of contaminants occurred and had the potential to impact soils along the proposed pipeline route.

Potential contaminants that may be encountered in soils proximate to these facilities include VOCs, petroleum hydrocarbons, polychlorinated biphenyls and other industrial chemicals. Additional soil contamination along the proposed Project route may result from hazardous material or fuel spills during construction and/or those occurring before construction in pre-existing contaminated areas. However, Algonquin has not

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<sup>3</sup> *See, e.g.,* The Nuclear Regulatory Commission's 2004 hazard evaluation for the National Enrichment Facility (NEF) (Accession ML0424600718), *available online*.

even completed its inventory of locations where sampling may be necessary and has not provided details to FERC on the protocols for any such additional sampling.

Based on the foregoing, the DEIS *recommends* that prior to construction of the Project, Algonquin file a Field Sampling Plan for potentially contaminated sites that could be encountered during construction, including, but not limited to, the locations of all proposed sampling, the number of samples to be taken and how and where the samples will be analyzed. SAPE respectfully suggests that Algonquin be required to make all further communication regarding the development of its Field Sampling Plan for potentially contaminated sites in New York available to the public for review and comment.

The absence of complete information on potential soil contamination along the proposed Project route deprives the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze the Field Sampling Plan for potentially contaminated sites in New York. *See* Section 4.2.2.6.

#### **IV. The Project Will Affect Numerous Unique Areas And May Cause Destruction of Significant Environmental Resources**

An astounding number of unique resource areas will be adversely affected by the Project, which will cross through several critical environmental areas.

The proposed pipeline will cross the Hudson River, an American Heritage River, as well as Harriman State Park, the Blue Mountain Reservation, the Sylvan Glen Park Preserve, Cheesecote Mountain, the Washington-Rochambeau National Historic Trail and a Village Park in the Village of Buchanan. The proposed pipeline will cross water bodies located within sub-basin level watersheds of the Lower Hudson Watershed in Rockland, Westchester and Putnam Counties. These include crossings at the Minisceongo Creek, Cedar Pond Brook and Dickey Brook, which serve as cold- and warmwater fisheries.

The exceptional value of these unique resource areas cannot be disputed. American Heritage Rivers, including the Hudson River, are so designated because they have characteristics that render them distinctive or unique. The public lands and resources protected at the state level that will be adversely affected by the Project are no less remarkable. For example, the Haverstraw to Stony Point Take-up to Relay segment will affect approximately 15 acres of diverse forested land across a section of the Harriman and Sterling Forests in Rockland County, New York. These areas support a wide variety of flora and fauna.

## **A. Wetlands & Vernal Pools**

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration to support and under normal circumstances do support, a prevalence of vegetation typically adapted for live in saturated soil conditions. Wetlands are a source of significant biodiversity and serve a variety of functions including flood control, wildlife habitat, recreational opportunities, and improving water quality.

The Project will impact approximately 25 acres of wetlands and 7 vernal pools in New York State. The Project will result in 77 wetland crossings in New York alone. In particular, the Project will impact a large wetland system (B13-RLR-W3) between about MPs 0.8 and 1.0 of the Haverstraw to Stony Point Take-up and Relay segment and the 2 vernal pools in Cortlandt, New York that are located within the temporary construction area for the Project.

Project construction activities can affect wetland resources in many ways. During construction, the primary direct impact of the Project on wetlands in New York would be the short and long-term alteration of wetland vegetation. Other direct impacts associated with the Project could include changes in wetland hydrology and water quality. These disturbances could result in altered biological activities and chemical conditions that could affect the establishment of native vegetation. Secondary impacts could include reduced riparian buffers, disturbance to adjacent habitats and incremental fragmentation. Notwithstanding the identified impacts, the DEIS concludes that the Project would not result in adverse impacts on the functions of the wetlands.

Based on the foregoing, the DEIS *recommends* that prior to construction beginning in the vicinity of the 2 vernal pools in New York, Algonquin file revised site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools as required by state agencies. SAPE respectfully requests that Algonquin be *required* to make all further communication regarding site-specific crossing plans for the two vernal pools in New York available to the public for review and comment.

Algonquin's failure to provide site-specific plans with respect to the crossing of two vernal pools in New York means that the public has had no meaningful opportunity for comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools in New York. *See* Section 4.4.3.2.

### **1. Non-Saturated Wetlands & Construction Right-of-Way Width**

Algonquin's Erosion and Soil Control Plan ("E&SCP") stipulates that construction right-of-way width in wetlands be limited to 75 feet and that all additional

temporary work space should be located at least 50 feet from wetlands except where an alternative measures has been requested and approved by FERC.

Not surprisingly, Algonquin identified numerous areas (in Table 4.4.4-1) where it believed that the 75-foot right-of-way was insufficient to accommodate its wetland construction—and that a wider right-of-way was necessary. Without considering the full scope of the environmental impacts on these non-saturated wetlands and without providing data or methodology to support its determination the DEIS simply concludes that Algonquin’s modification requests for a wider right-of-way are justified. Further, the DEIS acknowledges that Algonquin’s E&SCP was not consistent with FERC Procedures with regard to construction in site-specific non-saturated wetland conditions.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file its final site-specific information regarding the location of those wetlands it believed would meet the criterion of non-saturated conditions at the time of construction. SAPE respectfully requests that Algonquin make all further information regarding the location of those wetlands it believed would meet the criterion of non-saturated conditions at the time of construction available to the public for review and comment.

Algonquin’s failure to provide any site-specific information regarding the location of non-saturated wetlands in its E&SCP deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any site-specific information regarding the location of wetlands believed to meet the criterion of non-saturated conditions at the time of construction. *See* Section 4.4.4.

## **2. Compensatory Mitigation Plan**

The majority of the wetland impacts would be on PEM (Palustrine Emergent) and PSS (Palustrine Scrub-Shrub) wetlands, with only 17 acres of PFO (Palustrine Forested) wetland impacts. About 2.5 acres of PFO wetlands would be permanently converted to non-forested conditions as a result of the Project. Algonquin developed a Compensatory Mitigation Plan to provide compensatory mitigation for both temporary impacts and permanent conversion of wetlands to another cover type.

Even though the United States Army Corps of Engineers (“USACE”) NY District indicated what it would require in terms of on-site restoration for temporary wetland impacts and off-site mitigation for permanent conversion, Algonquin has not yet developed any final mitigation plan. Further, Algonquin has not even confirmed New York’s compensatory mitigation requirements for wetland impacts and has just assumed that the proposal submitted to the USACE NY District would be acceptable to the New York State Department of Environmental Conservation (“NYSDEC”). Notwithstanding these deficiencies, the DEIS concludes that impacts on most wetland resource would be minimal and would be temporary in duration.

Based on the foregoing, the DEIS *recommends* that prior to beginning construction in New York, Algonquin file its final Compensatory Mitigation Plan, developed in consultation with USACE and NYSDEC and file documentation of consultation with these agencies regarding the Compensatory Mitigation Plan. SAPE respectfully suggests that Algonquin must be *required* to make all further communication regarding development of its final Compensatory Mitigation Plan available to the public for review and comment.

Algonquin's failure to finalize a Compensatory Mitigation Plan deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any final Compensatory Mitigation Plan. *See* Section 4.4.5.

## **B. Harriman State Park – Site Specific Plan**

Algonquin's existing right-of-way is currently recognized as existing scrub-shrub and open field wildlife habitats used by a variety of species inhabiting Harriman State Park and Blue Mountain Reservation.

Since Project construction is expected to have impacts on wildlife species that inhabit these habitats, Algonquin met with the Palisades Interstate Park Commission ("PIPC") in January 2014 to discuss the Project's impacts on Harriman State Park. As a result of the meeting, Algonquin agreed to conduct tree counts for the portions of the Project's pipeline construction located in the park to address compensation for tree removal. Algonquin still has not completed *any* tree surveys and continues to consult with the New York State Office of Parks Recreation and Historic Preservation ("NYSOPRHP") and PIPC.

Based on the foregoing, the DEIS *recommends* that, prior to construction of the Haverstraw to Stony Point Take-up and Relay segment, Algonquin file a site-specific plan for the Harriman State Park, including any avoidance or mitigation measures developed with the NYSORPH and PIPC. SAPE respectfully suggests that Algonquin be *required* to make all further communications with NYSORPH and PIPC regarding the site-specific plan for the Harriman State Park available to the public for review and comment.

The absence of any completed tree survey of Harriman State Park deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project as currently envisioned will have on Harriman State Park. *See* Section 4.6.1.5.

## **C. St. Patrick's Church (Verplanck, New York)**

St. Patrick's Church is located in the hamlet of Verplanck, New York. The Stony Point Take-up and Relay segment of the pipeline is expected to cross church property. A

new easement would be required for this crossing as it deviates from the existing right-of-way. Without mitigation, project construction will result in significant adverse impacts to the church property. For example, the project will restrict church parking, interfere with access to the church, and result in noise and dust disturbances. Notably, however, Algonquin has not filed a site-specific construction plan for the church.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file a site-specific construction plan for the St. Patrick Church developed in consultation with church leadership. SAPE respectfully suggests that Algonquin be *required* to file its site-specific plan for the church property and to make all further communications regarding its site-specific construction plan for the St. Patrick's Church available to the public for review the public for review the public for review and comment.

The absence of any site-specific construction plan for the St. Patrick's Church deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on St. Patrick Church. *See* Section 4.8.5.1.

#### **D. Buchanan-Verplanck Elementary School**

The Buchanan-Verplanck Elementary School is a public elementary school serving about 300 people in Westchester County. The Stony Point to Yorktown Take-up and Relay segment of the Project would be located adjacent to the back portion of the school property between MPs 4.9 and 5.0.

The DEIS fails to adequately analyze the potential safety-related impacts of siting a 42-inch diameter high-pressure gas pipeline in close proximity to an elementary school. However, the DEIS acknowledges that, since construction activity could potentially coincide with the school year, construction noise and dust could cause a disturbance to school operations. SAPE suggests that such disturbances are, more likely, a certainty that is unacceptable both in terms of the impact on children's health and their studies.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file a site-specific construction plan for the Buchanan-Verplanck Elementary School developed in consultation with school management. SAPE respectfully suggests that Algonquin be *required* to file its site-specific construction plan and to make all further communications regarding that site-specific construction plan for the Buchanan-Verplanck Elementary School available to the public for review and comment.

The absence of a site-specific construction plan for the Buchanan-Verplanck Elementary School deprived the public and, more to the point, the parents of affected students attending the school, of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on St. Patrick Church. *See* Section 4.8.5.1.



### **E. Hudson River Crossing -- Horizontal Directional Drilling (“HDD”)**

The Hudson River is the only major water body (greater than 100 feet wide) crossed by the pipeline. Algonquin plans to use the Horizontal Directional Drilling (“HDD”) crossing method at the Hudson River in New York.

In accordance with the prescribed (Delft Geotechnics) method, Algonquin completed a hydraulic fracture evaluation for the Hudson River HDD to estimate the maximum effective pressure (*i.e.*, drilling fluid pressure) that can be induced during a HDD operation within a particular soil. The results of the evaluation suggested that there exists a relatively high potential for hydraulic fracture in the soft sediments of the Hudson River HDD alignment. Despite the high risk of hydraulic fracturing using HDD, the DEIS concluded that the HDD method was an appropriate technique for installing the pipeline at the Hudson River crossing.

While the DEIS briefly assesses alternatives to the proposed route, it does so without providing any data to support its conclusion that the proposed route is the most suitable. Notably, Algonquin has not provided the Commission with a contingency plan that incorporates another location or another construction methodology for the Hudson River crossing. If the Project proceeds as planned and the HDD proves unsuccessful, Algonquin will have no alternative location or methodology identified in connection with the proposed Project’s largest water crossing. This is unacceptable.

Algonquin’s failure to develop a contingency plan that incorporates another location or another construction methodology for the HDD crossing of the Hudson River falls short of what is required under NEPA.

Algonquin’s failure to include an alternative location or methodology for the planned Hudson River crossing deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to fully examine any alternative plan considered by Algonquin for the HDD crossing of the Hudson River. *See* Section 4.4.3.

### **F. The Catskill Aqueduct Crossing**

The proposed Stony Point to Yorktown Take-up and Relay segment crosses the Catskill Aqueduct. The Catskill Aqueduct is a part of the New York City water supply system. It brings water from the Catskill Mountains to Yonkers where it connects to other parts of the system.

As currently proposed, Algonquin would remove its existing 26” pipeline that currently crosses over the aqueduct and replace those removed section(s) with 42-inch diameter pipeline. Remarkably, however, Algonquin has still not finalized its planned crossing of the Catskill Aqueduct and is still in consultation with NYCDEP regarding the crossing and evaluating an alternative route that would relocate the segment to the south.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file a site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP, containing the location relative to the aqueduct, the construction methods, timing of construction and any mitigation measures to minimize impacts. SAPE respectfully suggests that Algonquin be *required* to file its site-specific crossing plan for the Catskill Aqueduct and to make all further communication regarding the development of a site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP available to the public for review and comment.

Algonquin's failure to finalize its planned crossing of the Catskill Aqueduct deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to fully examine the extent of any impacts of the planned Catskill Aqueduct crossing. *See* Section 4.3.2.1.

### **G. Trench Dewatering**

Project construction activities could negatively affect water resources in many ways. During construction, open trenches may accumulate water, either from seepage or drainage. Where dewatering becomes necessary, the water would be removed and directed into well-vegetated uplands. However, Algonquin's Erosion and Soil Control Plan ("E&SCP") does not address the need to isolate shorter portions of trench to reduce the volume of water handled at one time.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file additional details describing how it would minimize trench dewatering as recommended by the NYSDEC and file documentation of its consultations with NYSDEC. SAPE respectfully suggests that Algonquin be *required* to file a report setting forth such additional details and to make all further communication regarding trench dewatering developed in consultation with the NYCDEC available to the public for review and comment.

Algonquin's failure to fully address trench dewatering and the need to isolate shorter portions of trench to reduce the volume of water handled at one time in its E&SCP deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on trench dewatering. *See* Section 4.3.2.6.

### **V. State of New York Parkland Alienation**

The proposed Project will intrude onto parkland in the State of New York, including the Blue Mountain Reservation, the Sylvan Glen Park Reserve (note: Granite Knolls West is incorrectly considered the same as Sylvan Glen Park Reserve in the DEIS and they are not the same), Cheesecote Mountain and a Village Park in the Village of Buchanan.

New York law is well settled: dedicated park areas in New York are impressed with a public trust for the benefit of the people of the State. That proposition is reflected both in New York case law and in New York statutes. The leading New York decision on this issue is *Williams v. Gallatin*, 229 N.Y. 248 (1920), in which the Court of Appeals held that legislative approval is required when there is a substantial intrusion on parkland for non-park purposes. This requirement, moreover, exists regardless of whether there has been an outright conveyance of title and regardless of whether the parkland is ultimately to be restored. Since *Williams*, New York courts have reaffirmed the principle that parkland is impressed with a public trust, requiring legislative approval before it can be alienated or used for an extended period for non-park purposes.

Notwithstanding the still-binding legal precedent requiring legislative authorization, the Commission takes the opposite position: that the proposed Project would fall within recognized “*de minimis*” exceptions to the rule. Yet the cases cited by the Commission in support of its position are distinguishable from the facts here, in that each of those cases involved land that was found *not* to be parkland.

Respectfully, SAPE believes that the proposed Project as currently envisioned does not fall within any recognized *de minimis* exception and that the proposed Project requires legislative approval for its intrusions onto New York state parkland. In any case, the issue is not one for the parties or the Commission to decide; only a court can properly make such determination in accord with *Williams* and its progeny. See Section 4.8.5.1.

## **VI. The Project Will Have Cumulatively Significant Impacts on the Environment**

NEPA mandates that a proper EIS include a full discussion of the cumulative impacts of a proposed project. See 40 C.F.R. §1508.25(a)(2); *Kleppe v. Sierra Club*, 427 U.S. 390, 413 (1976) (“Cumulative environmental impacts are, indeed, what require a comprehensive impact statement”). An EIS must include the cumulative effects of projects if those projects are “interrelated and functionally interdependent” to the proposed action. *Stewart v. Potts*, 996 F.Supp. 668, 683 (S.D. Texas 1998). Courts have been very clear that projects must be evaluated together whenever “proceeding with one project, will, because of functional or economic dependence, foreclose options or irretrievably commit resources to future projects. *Fritiofson v. Alexander*, 772 F.2d 1225, 1241 n. 10 (5<sup>th</sup> Cir. 1985). Under 40 C.F.R. §1508.7, cumulative impacts are defined as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The DEIS’s treatment of cumulative impact falls short of NEPA requirements. The DEIS fails to consider the full scope of impacts. It also assesses the identified impacts without providing any detailed or quantified data to support the analysis.

Finally, the DEIS impermissibly relies entirely on presumed compliance with permitting requirements and mitigation plans to justify its conclusion that most of the adverse impacts environmental impacts associated with the Project would be reduced to less than significant levels.

Although it includes a small section on cumulative impacts, the DEIS failed to consider the cumulative environmental impacts associated with the planned Atlantic Bridge Project and the Access Northeast Project. Remarkably, the DEIS failed to even mention the Access Northeast Project. Since the AIM Project, the Atlantic Bridge Project and the Access Northeast Project are connected actions and thus “interrelated and functionally interdependent,” the present DEIS does not suffice to analyze their cumulative effects. *Stewart*, 996 F.Supp. at 683.

The DEIS represents that “three types of projects (past, present and reasonably foreseeable projects) could potentially contribute to a cumulative impact when considered with the proposed AIM Project.” However, the DEIS fails to consider the full scope of connected and similar actions as well as the cumulative impacts arising from the full scope of those actions. *See* Section 4.4.3.2.

## **VII. The DEIS Improperly Segments the AIM Project from Connected Actions**

One of the DEIS’s principle deficiencies is that it improperly segmented the AIM Project from other connected actions which are part of Spectra/Algonquin’s larger development plan to expand its existing pipeline system. Segmentation is a means of circumventing NEPA’s purpose by dividing a larger action into smaller proposed actions, thereby minimizing the environmental consequences of a larger plan by dividing it into several proposals for analysis in separate NEPA documents. *See Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1028 (10<sup>th</sup> Cir. 2002).

Indeed, Algonquin and its parent company, Spectra Energy, plan to modify other parts of its existing interstate pipeline system in expansions known as the Atlantic Bridge Project and the Access Northeast Project. While no formal applications have yet been filed, the DEIS acknowledges that the Atlantic Bridge Project would be similar in scope to the AIM Project and would involve facilities in the same region of influence. Nevertheless, the DEIS fails to consider the cumulative impacts of the Atlantic Bridge Project since it would “not occur at the same time” as the AIM Project and its details were unknown.

Remarkably, the DEIS makes no reference whatsoever to the Access Northeast Project, a \$3 billion dollar Spectra project that would expand the existing Algonquin pipeline from New Jersey through New York and Connecticut to Everett, outside of Boston. The Access Northeast Project is specifically intended to complement the AIM and Atlantic Bridge projects and would reportedly boost capacity on Spectra’s Algonquin (and Maritimes) pipelines by as much as 1 billion cubic feet a day, by installing new larger diameter pipelines on existing routes. FERC’s failure to analyze the Atlantic

Bridge Project and the Access Northeast Project as connected actions raises serious questions about the adequacy of the DEIS's cumulative impacts analysis.

As explained below, the Atlantic Bridge Project and the Access Northeast Project are clearly connected to the AIM Project, and thus must be reviewed, pursuant to NEPA, in the same EIS, particularly with regard to potential cumulative effects associated with the several projects. *See* 40 C.F.R. §1508.25(a).

To determine whether the AIM Project has been improperly segmented, the proper inquiry is whether the Atlantic Bridge Project and the Access Northeast Project are connected for the purposes of NEPA. Under 40 C.F.R. 1508.25(a)(1), actions are connected, meaning that they must be analyzed under the same EIS, if they:

- i) Automatically trigger other actions which may require environmental impact statements;
- ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; or
- iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

The purpose for the rule against segmentation is to “prevent an agency from dividing a project into multiple actions, each of which individually has an insignificant environmental impact, *but which collectively have a substantial impact.*” *Wilderness Workshop v. BLM*, 531 F.3d 1220, 1228(10th Cir. 2008) (emphasis added); *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969 (9th Cir. 2006). In other words, the rule prevents applicants and agencies from thwarting their NEPA obligations by improperly segmenting projects into smaller components in order to avoid considering their collective impact.

Under this definition, the AIM Project, the Atlantic Bridge Project and the Access Northeast Project are plainly connected actions that must be considered together under the same EIS. The primary collective purpose of these interdependent projects is to increase Spectra/Algonquin's existing pipeline capacity and to provide it access to growing natural gas supply and demand markets.

The fact that there is no formal application currently filed by Algonquin for the Atlantic Bridge Project or the Access Northeast Project should not preclude a finding that the NEPA process was unlawfully segmented. Algonquin should not be allowed to circumvent heightened environmental scrutiny by timing its applications to FERC in an effort to manipulate the NEPA process to avoid a cumulative impact analysis of its larger development plans.

In short, we believe that the AIM Project is a wholly arbitrary subdivision of a larger development project, apparently created for the purpose of thwarting NEPA review of the cumulative effects of the project in its entirety. The DEIS fails to evaluate the AIM Project in conjunction with the Atlantic Bridge Project and the Access Northeast Project even though the three projects are clearly connected and will unavoidably create a

greater cumulative effect than might be anticipated by a focused or limited review of any one of the interrelated segments.

In *Delaware Riverkeeper Network v. FERC*, No. 13-1015 (D.C. Cir. 2014), the D.C. Circuit recently applied NEPA's segmentation policy to a pipeline project. Giving considerable deference to the applicable NEPA regulations on segmentation (40 C.F.R. §1508.25), requiring federal agencies to consider the effect of "connected actions" and "similar actions" when carrying out their responsibilities under NEPA, the Court found that where four upgrades were "physically, functionally and financially connected and interdependent," they warranted a single NEPA analysis. We suggest that this analysis should be applied to the Project.

In light of the foregoing, we question why FERC would allow the AIM Project, the Atlantic Bridge Project and the Access Northeast Project to be submitted in a piecemeal fashion without a full analysis of their cumulative impacts. We urge FERC to reevaluate Spectra/Algonquin's overarching development plans to markedly expand its existing pipeline infrastructure in New York, Connecticut, Rhode Island and Massachusetts. By omitting from the DEIS any substantive discussion of the Atlantic Bridge Project and the Access Northeast Project, FERC has effectively failed to take into account the cumulative impacts of connected projects, and has thus acted contrary to NEPA and thwarted effective review by segmenting the AIM Project.

By failing to consider the Atlantic Bridge Project and the Access Northeast Project as interdependent pieces of Spectra/Algonquin's larger development plan to expand its existing pipeline infrastructure, FERC facilitated the unlawful segmentation of the AIM project.

The DEIS's failure to consider the cumulative impacts of the Atlantic Bridge and Access Northeast projects is not cured by its cursory treatment of twelve (12) other existing or proposed projects evaluated for potential cumulative impacts analysis. Notably, the DEIS fails to provide any substantive information about the additive impacts of those actions, and instead only provides brief descriptions of the actions in Table 4.13-1. Yet the information in Table 4.13-1 fails to provide anything substantive about the projects listed or any meaningful analysis of their potential for cumulative impacts.

As a result, the DEIS is inadequate in considering the combined environmental impacts of related existing and reasonably foreseeable pipelines within the Commission's jurisdiction, and a new EIS must be prepared that includes an analysis of the cumulative impacts of those projects, including the Atlantic Bridge Project and the Access Northeast Project.

#### **A. Marcellus Shale – Natural Gas Development**

Remarkably, the DEIS fails to address the effect of the Project together with the existing or reasonable foreseeable gas development activities, most notably hydraulic fracturing that has already been determined to have impacts on seismic activity. Instead, the DEIS omits any substantive discussion of foreseeable gas development, concluding

that the resources that may be affected by shale development would not be affected by the Project and the Project would not be affected by the development in the shale region.

On its face, this conflicts with NEPA policy and federal regulation, which require an analysis of the full range of a project's impacts "whether direct, indirect, or cumulative." (40 C.F.R. 1508.8). Under NEPA, indirect impacts are defined as those that occur "later in time or farther removed in distance" and may include

...growth inducing effects and other effects related to induced changes in the pattern of land use ... and related effects on air and water and other natural systems, including ecosystems. (40 C.F.R. §1508.8).

Despite this definition, the DEIS fails to address the indirect impacts of induced gas development, specifically the extent to which the presence of the proposed Project will encourage and facilitate the development of natural gas infrastructure. The DEIS also fails to consider how environmental impacts of the proposed Project may be cumulated with the impacts of gas development in the Marcellus shale region. FERC incorrectly limits its analysis to short- and long-term impacts resulting from construction of the proposed Project, ignoring the potential for future induced development of related infrastructure in New York.

Natural gas development in and around the pipeline's service area, extending into the Marcellus shale region, is a reasonably foreseeable consequence of the Project, and its effects must be considered as cumulative impacts. To the extent the DEIS considers Marcellus Shale activities, however, it fails to provide any quantified or detailed account of such activities, or consider their cumulative impacts.

While the DEIS includes a general acknowledgement that the Commission received numerous comments during the scoping for the Project about the cumulative impacts of natural gas development (including hydraulic fracturing) in the Marcellus shale region, it simply concludes, without discussion, that the local resources affected by natural gas development activities would not be affected by the Project since they would occur more than ten miles from the Project construction area, outside the sub-watersheds crossed by the Project, and outside the air quality control regions for the Project compressor stations.

The absence of any meaningful analysis in the DEIS regarding the cumulative impacts of natural gas development failed to take the requisite hard look at the environmental impacts of the proposed Project. A revised DEIS must be prepared to detail and analyze the cumulative impacts of natural gas development (including hydraulic fracturing) in the Marcellus shale region, including impacts from other reasonably foreseeable activities such as the construction of additional pipeline, access roads, compressor stations and other infrastructure. *See* Section 4.13



## **VIII. The Project May Adversely Affect Several Endangered and Threatened Species and Their Habitat**

The U.S. Fish and Wildlife Service (“FWS”) identified seven federally listed threatened or endangered species that are known to be present in the Project area. For three of the seven species identified (the Indiana bat, Northern long-eared bat and New England Cottontail) the DEIS cited incomplete survey results. For surveys that do exist for the remaining species, the DEIS fails to describe the methodology used or to identify or analyze any data. Further, the DEIS repeatedly recognizes the loss of habitat or changes to other vegetation but fails to carefully examine the impact of those losses on endangered and threatened species.

### **A. Indiana Bat**

The inadequacy of survey results is particularly apparent for the Indiana bat, a federally listed endangered species that may be impacted by the Project. Notably, the FWS identified a section of the Stony Point to Yorktown Take-up and Relay segment as having the potential to provide suitable summer habitat for the Indiana bat. Yet despite the likely presence of Indiana bats in the Project area, Algonquin has still not completed any survey of the area for bats.

While the DEIS states that Algonquin is in consultations with the FWS to *plan* surveys and develop and implement mitigation measures, the fact that there is still no complete survey of the Project in regard to this endangered species is astounding. Further, the DEIS fails to provide any meaningful analysis of the potential for habitat destruction. The incomplete survey results, lack of habitat destruction analysis and the lack of any suggested avoidance or mitigation measures, clearly demonstrate that the DEIS is inadequate.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file all survey results, any avoidance or mitigation measures developed in consultation with the FWS and a statement regarding Algonquin’s intent to comply with those measures.

FERC’s framing here as a mere “recommendation” what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken. Although a segment of the Project has been identified as having the potential to provide suitable summer habitat for the Indiana bat, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully requests that Algonquin make all further communication regarding the Indiana bat developed in consultation with the FWS available to the public for review and comment.

Algonquin’s failure to have any completed survey of the Project area for the presence of the Indiana bat deprived the public of a meaningful opportunity to comment

on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on the Indiana bat. *See* Section 4.7.1.2.

## **B. Bog Turtle**

The bog turtle is a federally listed threatened turtle that is potentially present within the Project area. Based on information from the FWS, bog turtles could be present in suitable wetlands along the proposed Southeast to MLV 19 Take-up and Relay segment in Putnam County, New York. Notably, consultation with the FWS identified a known bog turtle habitat within sixteen (16) miles of the proposed Project facilities in New York.

Although Algonquin completed surveys for bog turtles and identified a known bog turtle habitat in the vicinity of the Project area, the DEIS simply concludes without explanation that the Project would not likely affect the bog turtle.

Algonquin's failure to adequately explain its methodology in reaching a determination that bog turtles would not likely be affected by the Project deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on the bog turtle. *See* Section 4.7.1.2.

## **C. Northern Long-eared bat**

The northern long-eared bat, currently proposed for federal listing as an endangered species, may be impacted by the Project. Yet despite the possibility that Northern Long-eared bats are present in the Project area, Algonquin has still not completed any survey of the area.

While the DEIS states that Algonquin will be conducting surveys in connection with this species at the same time as the surveys it plans for the Indiana bat (see above), the incomplete results clearly demonstrate that the DEIS is inadequate.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file its survey results, any avoidance or mitigation measures developed in consultation with the FWS and a statement regarding Algonquin's intent to comply with those measures.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken and if so, whether such measures will be effectively designed. Although Algonquin continues to consult with the FWS to assess the potential occurrence of the Northern long-eared bat in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully suggests that

Algonquin be *required* to make all further communication regarding the Northern long-eared bat developed in consultation with the FWS available to the public for review and comment.

Algonquin's failure to have any survey completed of the Project area for the presence of the northern long-eared bat deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on the northern long-eared bat. *See* Section 4.7.1.3.

#### **D. Migratory Birds**

Potential impacts of the Project on migratory birds, including FWS Birds of Conservation Concern (BCC)-listed birds, would include temporary and permanent loss of habitat associated with the removal of existing vegetation during construction. Noise and other construction activities could also potentially affect foraging and breeding activities that occur during the nesting season. Migratory birds could also be affected by the operation and maintenance of the new facilities, including a reduction in habitat, potential increase in parasitic bird species, edge effects and ongoing disturbances associated with maintenance.

The Haverstraw to Stony Point Take-up and Relay segment of the Project as currently envisioned runs adjacent to and across the section of the Harriman and Sterling Forests' Important Bird Area (IBA) in Rockland County, New York. This diverse forested area supports a healthy representative breeding community of migratory birds which may be potentially harmed or disturbed by impacts associated with the Project, including tree removal and construction related disturbances.

While the DEIS outlines mitigation measures for Algonquin to implement to potentially minimize the proposed Project's impact on migratory birds, it states that the FWS is still reviewing the AIM Project for migratory bird impacts, and Algonquin is still in consultations with the FWS and NYSDEC. The absence of complete information as to the potential impacts of the Project on migratory birds demonstrates that the DEIS is incomplete.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file any updated consultations with the FWS Field Office in New York regarding migratory birds including and avoidance measures developed.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether effective measures to mitigate harms to the species in the project area will ever be undertaken. Although Algonquin continues to consult to assess the potential impact on migratory birds in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully suggests that

Algonquin be *required* to make any further communication regarding migratory birds developed in consultation with the FWS available to the public for review and comment.

The absence of any final assessment by the FWS regarding the potential impact of the Project on migratory birds deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on migratory birds. *See* Section 4.7.2.

### **E. Bald Eagles**

As of March 2013, adult and immature bald eagles were observed flying along the shorelines and hillsides of the Hudson River and an active nest was observed less than 3 miles from the Project. However, the DEIS does not include any substantive analysis of the impacts the Project would have on bald eagle habitats.

While the DEIS states that Algonquin is in consultation with the FWS and NYSDEC to discuss survey results and to develop and implement appropriate avoidance and mitigation measures to avoid impacts on bald eagles in the Project area, the absence of complete information on the bald eagle suggests that the DEIS is inadequate.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file any updated consultations with the FWS and NYSDEC regarding bald eagles including and avoidance measures developed.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken. Although Algonquin continues its consultation to assess the potential impacts on bald eagles in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully requests that Algonquin make any further communication regarding bald eagles developed in consultation with the FWS or NYSDEC available to the public for review and comment.

Algonquin's failure to assess the potential impacts on bald eagles in the Project area deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on bald eagles. *See* Section 4.7.3.

### **F. Timber Rattlesnakes**

The timber rattlesnake is a state-listed threatened species that inhabits deciduous forest in rugged terrain. According to NYSDEC, timber rattlesnakes are known to be present along the Stony Point to Yorktown Take-up and Relay segment of the Project. Possible impacts to the timber rattlesnake include alteration of forested habitat and direct impacts including mortality. Since Algonquin would not be able to adhere to NYSDEC's

seasonal restrictions for timber rattlesnakes, the DEIS outlined additional measures to be implemented by Algonquin to mitigate impacts to rattlesnakes.

Yet despite the likely presence of timber rattlesnakes along the Project area, Algonquin has still not completed its survey for snakes or performed any included any analysis of habitat destruction.

While the DEIS states that Algonquin is engaged in consultation with the NYSDEC to identify potential existing habitats in construction work areas in Rockland County and determine proper mitigation measures, the fact that there is still no complete survey of the Project in regard to this state-listed threatened species is disturbing. In addition, the DEIS fails to provide any meaningful analysis of the potential for any habitat destruction.

Based on the foregoing, the DEIS *recommends* that Algonquin file any results for timber rattlesnakes habitat, permit requirements, and avoidance or mitigation measures developed in consultation with the FWS and NYSDEC regarding timber rattlesnakes.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken. Although Algonquin continues to consult to assess the potential impacts on timber rattlesnakes in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE requests that Algonquin make any further communication regarding timber rattlesnakes developed in consultation with the FWS or NYSDEC available to the public for review and comment.

Algonquin's failure to have any survey completed of the Project area for the presence of timber rattlesnakes deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on timber rattlesnakes. *See* Section 4.7.5.1.

## **G. Coastal Zone Management**

The Stony-Point to Yorktown Take-up and Relay segment crosses the coastal zone management area associated with the Hudson River in the Town of Stony Point and in the City of Peekskill. The Project plans to cross the Hudson River using the HDD method to avoid impacts on aquatic resource and potential impacts on critical environmental areas.

Algonquin filed its consistency assessment application with the New York State Department of State ("NYSDOS") in February 2014 describing how the Project would be consistent with state coastal policies as well as policies of the town approved waterfront revitalization programs. To date, however, NYSDOS has yet to approve Algonquin's consistency assessment application.

Since NYSDOS has not yet concurred with Algonquin's consistency assessment application, the DEIS fails to address whether or not the Project would or would not be consistent with the above mentioned coastal zone management policies to justify approval of this Project at this time.

Based on the foregoing, the DEIS *recommends* that Algonquin file documentation of concurrence from the NYSDOS that the Hudson River crossing is consistent with New York coastal policies, including the Stony Point and Peekskill waterfront revitalization plans. SAPE requests that Algonquin be *required* to make any further communication regarding concurrence from the NYSDOS that the Hudson River crossing is consistent with New York coastal policies available to the public for review and comment.

Algonquin's failure to have its consistency assessment application approved by NYSDOS deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze whether or not the proposed Project's Hudson River crossing is consistent with New York coastal policies. *See* Section 4.8.4.1.

## **IX. Analysis of Air Quality and Climate Change Impacts is Inadequate**

As discussed below, the DEIS dramatically underestimates the extent to which Project construction and operation will emit air pollutants and fails to present a comprehensive analysis of the direct, indirect and cumulative effects of the Project on air quality.

The DEIS acknowledges that construction and operation of the proposed Project will result in significant emissions of various air pollutants, including NO<sub>x</sub>, VOCs, carbon monoxide, particulate matter, sulfur dioxide and GHGs. These pollutants affect air quality—and therefore human health—in a variety of ways. NO<sub>x</sub> is a precursor of both ozone and fine particulate matter. VOCs are also an ozone precursor. Fine particulate matter is linked to increased heart attacks, aggravated asthma and decreased lung function, and for people with heart or lung disease, premature death. Ozone exposure can lead to coughing, chest pain and throat irritation. It also exacerbates pre-existing bronchitis, emphysema and asthma and can reduce lung function.

With the exception of sections exploring whether air emissions trigger regulatory requirements, the DEIS does not undertake any analysis of the potential impacts on those who may be at risk of exposure to the HAPs. FERC's failure to undertake any meaningful analysis of the effects of emissions from Project construction and operation is particularly concerning, given that the proposed Project would result in significant emissions of NO<sub>x</sub> and VOCs. *See* Section 4.4.3.2.

### **A. Compressor Stations / M&R Stations**

The compressor stations in New York are already major sources of Hazardous Air Pollutants (HAPs). Peer-reviewed scientific studies indicate that emissions from

compressor stations and other shale gas infrastructure are associated with negative health impacts. Current emissions will be significantly increased by the expansion of the Southeast and Stony Point compressor stations, and the region including Putnam, Rockland and Westchester counties is already considered a non-attainment zone for air quality standards according to the United States Environmental Protection Agency (USEPA).

Submissions made by Algonquin (Resource Report #9 in Docket CP12-96-000) do not reflect the aggregate (existing or proposed) and cumulative emissions from compressor stations, metering stations and pipelines for the Project. In addition, modifications are needed to the M&R stations in Peekskill, Cortlandt and Stony Point, New York, to connect the existing valve to the new 42-inch diameter pipeline. However, the design modifications are still not complete.

Without considering any proposed design modification to the M&R stations, the DEIS largely dismisses the impacts of air pollution, and concludes that modeling analysis for all modeled pollutants would not contribute to a violation of the National Ambient Air Quality Standards (NAAQS). Since Algonquin's M&R design modifications are not yet complete, the DEIS could not have addressed the unknown.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin provide an update regarding the air permitting requirements associated with the modification to the M&R stations in New York, as well as any application filed with NYSDEC regarding air permitting/registration. SAPE requests that Algonquin be *required* to provide its update requiring the air permitting requirements and that it be further *required* to make any further communication regarding the air permitting requirements associated with the modification to the M&R stations in New York available to the public for review and comment.

The absence of any completed design modifications for the M&R stations in New York deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze the final design modifications for the M&R stations in New York. *See* Section 4.11.1.2.

## **B. Fugitive Emissions**

The DEIS fails to adequately address fugitive emissions from the proposed Project. The DEIS provides an annual estimate of these emissions in Table 4.11.1-13, but that table fails to provide any basis for those estimates. In particular, the DEIS provides no analysis of potential malfunctions of either pipeline or compressors that could lead to unintended emissions of various HAPs. This is a significant oversight, given that the PHMSA reported *nearly 300 significant pipeline incidents* in 2013. The data makes clear that spills, explosions and other unintended releases of pollutants from pipelines occur with a measurable degree of frequency. The resulting—and equally predictable—emissions should be taken into account as part of the DEIS's assessment of the impacts associated with the Project.



The DEIS's failure to adequately address fugitive emissions from the proposed Project and further, its failure to provide any data or methodology to support its conclusion, deprived the public of a meaningful opportunity to comment on the proposed Project and failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to adequately address fugitive emissions from the proposed Project. *See* Section 4.11.1.3.

### **C. Cumulative Impacts on Air Quality**

As discussed *supra*, the DEIS's analysis of cumulative impacts of the proposed Projects on air quality is insufficient. The DEIS concedes that the construction and operation of the Project will contribute cumulatively to air quality impacts, but concludes that it does not anticipate that the construction and operation of the proposed Project facilities will have a significant impact on air quality. Although it is unclear exactly to what extent the DEIS has calculated the potential emissions from other projects and included them in its cumulative impact analysis, the DEIS nonetheless discounts the impacts of those projects without offering any justification for such discounting of those dangers.

The DEIS's failure to adequately address the cumulative impacts of the proposed Projects on air quality deprived the public of a meaningful opportunity to comment on the proposed Project. Moreover, the DEIS failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to adequately address the cumulative impacts of the proposed Projects on air quality. *See* Section 4.13.7.

### **D. Climate Change**

The DEIS fails to undertake a meaningful analysis of the climate change impacts of GHG emissions, including fugitive GHG emissions, which would result from the construction and operation of the Project. The DEIS concludes, without pointing to any evidence in support of its conclusion, that emission of GHGs from the proposed Project would not have any direct impacts on the climate change in the Project area. As discussed *supra*, this conclusion fails to take into account the likelihood of a significant incident with the pipeline, resulting in a spill, leak, explosion or other unintended emission of GHGs.

The absence of any meaningful analysis of the climate change impacts of GHG emissions associated with this Project deprived the public of a meaningful opportunity to comment on the proposed Project. The DEIS, moreover, failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to analyze the climate change impacts of GHG emissions associated with this Project. *See* Section 4.13.8.

## **VII. Environmental Justice**

In New York, environmental justice communities are defined according to the following thresholds: communities where 23.6 percent of the individuals within a given census block are living below the poverty line as low-income populations; and/or communities where minorities comprise more than 51.1 percent of the population within a given census block as minority populations. Low income communities and communities of color have historically been overburdened as a result of air pollution from energy-generating facilities. In particular, the proposed Project would have adverse impacts on neighborhoods within a 12.5-mile radius of downtown Peekskill, New York, an area that is already home to more than its fair share of hazardous waste facilities.

The primary adverse impacts on the environmental justice communities associated with the construction of the Project would be the temporary increases in dust, noise and traffic from the Project construction. These adverse impacts would occur along the entire pipeline route. However, the DEIS does not provide sufficient financial analysis of the Project to effectively determine if the Project would result in a disproportionately high and adverse impact on these minority and low-income populations.

Other than acknowledging that two census block groups crossed by the Project in Westchester County have minority populations greater than the minority threshold, the DEIS lacks any meaningful analysis of environmental justice issues. The lack of any discussion of the costs of the Project, including a full analysis of the discarded alternatives, prevents any meaningful understanding of the impact upon environmental justice communities.

The absence of any meaningful analysis in the DEIS of the proposed Project's impact on environmental justice issues along the pipeline route failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to analyze the impact on environmental justice issues along the pipeline route. *See* Section 4.9.10.

## CONCLUSION

For all of the reasons stated above, the DEIS is premature, incomplete, unsupported by evidence and fails to adequately consider the direct, indirect and cumulative impacts of the proposed Project. The proposed Project is unnecessary, improperly located in close proximity to a nuclear power facility, with significant environmental impacts that have not been fully addressed in the DEIS. The defects in the DEIS are fundamental and pervasive. We therefore request that the Commission: (1) take no further action with respect to permitting of the proposed Project on the basis of this profoundly flawed DEIS; and (2) prepare a revised DEIS with a new period for review and public comment to ensure that the FERC satisfies its obligations under NEPA.

Respectfully submitted,

Stop the Algonquin Pipeline Extension (SAPE)

Founding Members:

Susan Van Dolsen  
Paula Clair  
Suzannah Glidden  
Susan McDonnell  
Jerry Ravnitzky  
Marian Rose  
Ellen Weininger

Document Content(s)

SAPE.DEIS COMMENTS.FINAL.PDF.....1-27

***Paul M. Blanch***  
***Energy Consultant***

September 27, 2014

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

**Subject:**

Algonquin Gas Transmission, LLC  
Docket No. CP14-96-000  
FERC/EIS-0254D

Dear Ms. Bose

I am submitting the following comments on behalf of myself on the above-proposed project. I am a registered Professional Engineer with more than 45 years of Nuclear safety, engineering operation and Federal regulatory requirements.

I have been a consultant to the Chief Nuclear Officers at Indian Point and also an expert witness for the Attorney General for the State of New York related to the relicensing efforts of Indian point.

In October 2010<sup>1</sup> I petitioned<sup>2</sup> the Nuclear Regulatory Commission (NRC) to evaluate the risks associated with the existing gas lines. The NRC in its response stated this analysis had been conducted however they would not share it with me due to national security concerns.

I have conducted a detailed review of the Draft Environmental Impact Statement (DEIS) and the requirements as stated in 49 CFR 192 “Transportation of natural and other gas by pipeline: Minimum federal safety standards” and also 30 CFR Part 380, Appendix A to Part 380 – “Minimum Filing Requirements for Environmental Reports Under the Natural Gas Act.”

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<sup>1</sup> <http://pbadupws.nrc.gov/docs/ML1030/ML103020293.pdf>

<sup>2</sup> <http://www.huffingtonpost.com/huff-wires/20101025/us-indian-point-gas-line/>

Based upon these Federal requirements I have the following comments related to the DEIS and the Spectra application:

1. 30 CFR 380 (m), Reliability and Safety explicitly states:

*“Describe how the project facilities would be designed, constructed, operated, and maintained to minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes. (§ 380.12(m)).”*

This proposed line is located in the vicinity of residents, schools, churches and one of the largest nuclear plants in the USA. 49 CFR 192 discusses various design requirements for safety. I note that the new lines are not designed to the most stringent safety requirements of Class 4 lines. Contrary to these requirements I did not see any discussion within the DEIS or the application discussing what provisions would be incorporated to minimize the impact to the public and why these lines are not designed to the maximum safety standards specified by 49 CFR 192.111 and 49 CFR 192.5. These standards would require closer isolation valve spacing, and more robust pipes designed to withstand higher pressures. While not a specific requirement to design these lines as Class 4, it was never anticipated that gas transmission lines would be located near or on the property of a nuclear power facility.

There is no discussion in either the AIM proposed description or the DEIS as to automatic isolation valves which had been removed from the original gas lines. The only isolation valves are controlled from Houston, Texas and there is no assurance these will be operable due to an earthquake or other natural disaster.

2. The White Plains Journal News published the following Community View on September 15, 2014. Some of these may be new issues however none of these issues have been addressed in either the DEIS or the Spectra Application.

***“View: Algonquin plan poses risks to Indian Point, residents***

*Paul Blanch 10 p.m. EDT September 14, 2014 Spectra plans to place a larger gas pipeline near Indian Point. The probability of a gas line failure is remote but is not zero. It is unconscionable and irresponsible to continue this project prior to a complete, independent risk analysis.*

*Nuclear power plants and natural gas transmission lines provide energy for homes and businesses. Due to the inherent hazards associated with these energy sources, the federal government "regulates" both. The proposed routing of the Algonquin natural gas pipeline near the Indian Point nuclear plant poses the risk that these hazards may team up to harm the community.*

*I speak as a professional engineer with more than 45 years of nuclear experience including formerly reporting directly to the Chief Nuclear Officer at Indian Point and an expert witness for the State of New York related to the relicensing of Indian Point.*

*There are three gas existing natural gas transmission lines traversing the Indian Point site within 600 feet of vital structures. There has not been any publicly available analysis demonstrating the risks of these lines. The Nuclear Regulatory Commission has refused to provide this information under the guise of national security, yet has maintained the "secret" analysis shows Indian Point is not at undue risk.*

*Failure of any of these lines could result in a total loss of cooling to the reactor cores and 40 years inventory of spent fuel. There are no provisions within the area to combat this event until valves are remotely closed from the pipeline company's facility in Houston, Texas. In the meantime, the energy released from a ruptured line in one hour would exceed the energy released from one of the atomic bombs dropped on Japan in 1945.*

*Some of the possible consequences of a gas line fire/explosion to Indian Point include loss of power to the entire site, secondary fires from liquid fuel storage tanks, reactor core damage and melting, asphyxiation of site personnel, spent fuel radioactivity releases exceeding those of Fukushima, and social/economic damages exceeding \$1 trillion.*

*Now Algonquin/Spectra wants to place yet another high-pressure 42-inch line also in the vicinity of Indian Point, doubling the existing*



*capacity. According to the Federal Energy Regulatory Commission, "the proposed route would not pose any new hazard to the (Indian Point) facility." There is no way FERC could make this determination without a complete risk analysis. And FERC's Draft Environmental Impact Statement ignores damage prevention, emergency response and public awareness, which are federal Department of Transportation requirements.*

*Algonquin gas pipeline project sparks safety concerns*

*An independent study of a gas pipeline near a nuclear facility in another state concluded it represented an undue risk. The amount of gas flow and energy in that pipeline was less than 1/1000 of the Algonquin/Spectra project and the facility was located in an area with much lower population.*

*The probability of a gas line failure is remote but is not zero especially if terrorism is considered. This may possibly be one of the most attractive targets in the nation.*

*The event would be aggravated by the decision of Spectra to not include any automatic gas termination valves and no means to combat the fire/explosion prior to gas flow termination. The gas lines are not designed to the most stringent safety standards as discussed in DOT regulations. The only gas isolation valves are remotely controlled from Houston, Texas. It seems the community around Indian Point is protected against a gas pipeline rupture triggering a nuclear plant accident—unless a gas pipeline ruptures. That's unacceptable.*

*The State of New York and all of the impacted counties must demand an independent and transparent analysis be conducted by an independent engineering organization. The cost for this study should be borne by Spectra/Entergy.*

*It is unconscionable and irresponsible to continue this project prior to a complete, independent risk analysis. The potential consequences of this event are too devastating to the New York area and my home State of Connecticut not to design this new line to maximum safety standards and assess the risk.*

*The writer, a West Hartford, Conn., resident, is an engineer.”*

3. 30 CFR Part 380 also requires:

- (1) Describe measures proposed to protect the public from failure of the proposed facilities (including coordination with local agencies).
- (3) Discuss design and operational measures to avoid or reduce risk.
- (5) Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents (with estimates of probability of occurrence) and identify standard procedures for protecting services and public safety during maintenance and breakdowns.

Again, none of these requirements met or addressed.

4. Page ES-8 FERC DEIS states:

*“Algonquin identified that because of the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that it would implement, the proposed **route would not pose any new safety hazards to the IPEC facility.** To ensure that the AIM Project would not present new safety hazards to the IPEC facility, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.”*

This is one of the most egregious statements within the DEIS and is an irresponsible and rash statement with no bases. The Nuclear Regulatory Commission (NRC) has reviewed similar analysis at nuclear facilities nuclear facilities with 1/1000 of the proposed gas flow and located more than one mile from the facility and determined that a 16-inch operating at 50-PSI. The study

performed by Framatome determined gas line presented undue risk to the facility. Any analysis conducted with a foregone outcome as stated within the DEIS is completely unscientific and irresponsible. It should be FERC's responsibility to assure this analysis is conducted in an open, scientific, transparent independent manner with a peer review. This analysis cannot be conducted by any organization with a vested interest such as Spectra/Algonquin, Indian Point/Entergy or the Nuclear Regulatory Commission.

West Point Partners, LLC ("WPP") proposes to construct and operate the West Point Transmission Project ("the Project"), an approximately 80-mile-long high voltage electric transmission facility that will connect the existing National Grid Leeds Substation (Leeds Substation) in the Town of Athens, Greene County, NY, and the existing Consolidated Edison Company of New York, Inc. (Con Edison), Buchanan North Substation (Buchanan Substation) located adjacent to the Indian Point Energy Center in the Village of Buchanan, Town of Cortlandt, Westchester County, NY. For approximately 77 miles of its length, the Project will be buried under the bed of the Hudson River.

Both the American Society of Civil Engineers<sup>3</sup> and the National Association of Corrosion Engineers clearly state<sup>4</sup> that high voltage direct current (HVDC) lines will induce "stray currents" which will accelerate the corrosion of metallic piping systems. This HVDC line will directly intersect with both the new and 60 year old degrading existing gas transmission lines and piping systems and tanks at the Indian Point facility.

49 CFR Part 192, Appendix D to Part 192 - Criteria for Cathodic Protection and Determination of Measurements require this to be addressed and measures implemented to assure that there will be no impact or stray current corrosion induced by the HVDC lines in the proximity of the gas lines.

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<sup>3</sup> <http://ascelibrary.org/doi/abs/10.1061/9780784413142.093>

<sup>4</sup> <http://www.nace.org/cstm/Store/Product.aspx?id=b7a6056e-bb57-df11-a321-005056ac759b>

5. 49 CFR 192.615<sup>5</sup> requires “each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency.”

There is no discussion within the DEIS as to how this problem will be addressed especially when remotely operated valves are controlled from Houston, Texas.

6. 49 CFR §192.616 Public awareness requires “each pipeline operator must develop and implement a written continuing public education program that follows the guidance provided in the American Petroleum Institute's (API) Recommended Practice (RP) 1162 (incorporated by reference, *see* §192.7).”

There is no discussion within the DEIS of the application as to how this is being addressed. This public education process must include the potential consequences of impact to the Indian Point nuclear plants and how an accident would be minimized.

7. The requirements of 49 CFR 192 Subpart L—OPERATIONS<sup>6</sup> TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS are not addressed within the DEIS.
8. 30 CFR Part 380 states: “Describe measures used to exclude the public from hazardous areas. Discuss measures used to minimize problems arising from malfunctions and accidents **with estimates of probability of occurrence** (emphasis added) and identify standard procedures for protecting services and public safety during maintenance and breakdowns.”

There is no discussion within the DEIS as to how these requirements are addressed especially the probability and

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<sup>5</sup>[http://www.ecfr.gov/cgi-bin/text-idx?SID=feed3509ef9a6b39ee12360353228fd6&node=se49.3.192\\_1615&rgn=div8](http://www.ecfr.gov/cgi-bin/text-idx?SID=feed3509ef9a6b39ee12360353228fd6&node=se49.3.192_1615&rgn=div8)

<sup>6</sup><http://www.ecfr.gov/cgi-bin/text-idx?SID=feed3509ef9a6b39ee12360353228fd6&node=sp49.3.192.1&rgn=div6>

consequences of an accident and/or malfunction.

9. Based on the results of the Fukushima nuclear meltdowns the Social and Economic consequences may exceed \$1 Trillion should an accident occur with consequential damage due to proximity to Indian Point and NYC. Consequential damages from secondary fires and explosions from the millions of gallons of fuel oil stored on the Indian Point site must also be considered
10. The Nuclear Regulatory Commission has specifically notified<sup>7</sup> all nuclear facilities of the potential dangers of locating gas lines in the vicinity of nuclear plants. Neither the Spectra application nor the DEIS address this major risk.

There is no discussion of the potential for preventing terrorism and the impacts of such an event.

As stated in the DEIS: “To ensure that the AIM Project would not present new safety hazards to the IPEC facility, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.

It is imperative that this “Hazards Analysis” be performed by an independent, qualified party with oversight from representatives from local legislators and residents.

In summary, the proposed AIM project poses extreme dangers to the residents of Westchester County and surrounding areas that include pipe corrosion to the new and existing gas lines, damage due to installation and subsequent construction accidents, and other events that may impact the environment.

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<sup>7</sup> [INFORMATION NOTICE NO. 91-63: NATURAL GAS HAZARDS AT FORT ST. VRAIN NUCLEAR GENERATING STATION](#)

– 9 –

September 27, 2014

I would appreciate a detailed written response to these issues prior to the finalization of the DEIS.

Sincerely;

A handwritten signature in cursive script that reads "Paul M. Blanch".

Paul M. Blanch  
135 Hyde Rd.  
West Hartford, CT 06117  
860-236-0326

Cc: Chairman Allison M. Macfarlane  
USNRC

Mr. John Sipos  
State of New York  
Assistant Attorney General

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**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**Algonquin Gas Transmission, LLC**

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**Docket No. CP14-96-000**

**COMMENTS OF ENTERGY NUCLEAR INDIAN POINT 2, LLC, ENTERGY  
NUCLEAR INDIAN POINT 3, LLC AND ENTERGY NUCLEAR OPERATIONS, INC.  
ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR ALGONQUIN  
INCREMENTAL MARKET PROJECT**

Pursuant to the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) Notice of Availability of the Draft Environmental Impact Statement for the Proposed Algonquin Incremental Market Project, issued on August 6, 2014 in the above-captioned docket, Entergy Nuclear Indian Point 2, LLC, Entergy Nuclear Indian Point 3, LLC and Entergy Nuclear Operations, Inc.<sup>1</sup> (collectively, “Entergy”) hereby submit these comments concerning the draft environmental impact statement (“Draft EIS”) for the Algonquin Incremental Market Project (“AIM Project”).

**I. BACKGROUND**

On June 18, 2013, Algonquin Gas Transmission, LLC (“Algonquin”) submitted a request to FERC to use the Pre-Filing review process for the AIM Project. The Commission granted Algonquin’s request and subsequently issued a Request for Comments on Environmental Issues.

Entergy owns and operates the Indian Point Energy Center (“IPEC”), a nuclear-powered generating facility located at Buchanan, New York.<sup>2</sup> Algonquin’s existing pipeline system uses

<sup>1</sup> Entergy Nuclear Operations is a service company that represents certain of its affiliates in operational and regulatory matters, including representing them in Commission proceedings.

<sup>2</sup> IPEC has three nuclear units. IPEC Units 2 and 3 (“IP2” and “IP3”) are operating nuclear power plants; IPEC Unit 1 (“IP1”) is permanently shut down but certain IP1 systems and components interface with and in some cases support the operation of IP2 and IP3. Entergy Nuclear Operations, Inc. operates IP2 and IP3 as agent for Entergy Nuclear Indian Point 2, LLC and Entergy Nuclear Indian Point 3, LLC, the owners of IP2 and IP3,

an easement for three pipelines that cross the Hudson River at the IPEC property site. One of the AIM Project's original proposed routes (referred to as the "Northern Route") would continue to rely on this easement to cross IPEC's property. Accordingly, Entergy submitted National Environmental Policy Act ("NEPA") scoping comments to help FERC understand the safety, environmental, and nuclear regulatory considerations involved in the AIM Project as they may impact IPEC. Entergy wrote that it was necessary to determine, before FERC approval of the AIM Project, that expanding from a 26-inch diameter pipeline to a 42-inch diameter pipeline operating at higher capacities and pressure would not pose an increased nuclear safety risk in case of a postulated malfunction or failure of the expanded natural gas pipeline located near IPEC.<sup>3</sup> Specifically, Entergy's comments explained that "NRC regulations require that nuclear power plant structures, systems and components important to safety be appropriately protected against dynamic effects resulting from equipment failures and other events and conditions that may occur outside a nuclear power plant, including the effects of explosions of materials that may be carried near the nuclear facility such as natural gas."<sup>4</sup>

On February 28, 2014, Algonquin submitted an application for a certificate of public convenience and necessity, pursuant to section 7(b) and 7(c) of the Natural Gas Act and Part 157 of the Commission's regulations for the AIM Project.<sup>5</sup> On April 8, 2014, Entergy submitted a motion to intervene with comments in this docket. Entergy explained that due to the proximity

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respectively, pursuant to an Operating Agreement. Entergy Nuclear Operations, Inc. and Entergy Nuclear Indian Point 2, LLC hold the operating and owner's licenses, respectively, issued by the Nuclear Regulatory Commission ("NRC") for IP2. Entergy Nuclear Operations, Inc. and Entergy Nuclear Indian Point 3, LLC hold the operating and owner's licenses, respectively, issued by the NRC for IP3.

<sup>3</sup> *Algonquin Gas Transmission, LLC*, NEPA Scoping Comments of Entergy Nuclear Operations, Inc. at 4, Docket No. PF13-16-000 (Oct. 14, 2013) (citing U.S. Nuclear Regulatory Commission Regulatory Guide 1.91, Rev. 2, Evaluations of Explosions Postulated to Occur at Nearby Facilities and on Transportation Routes Near Nuclear Power Plants (Apr. 2013)).

<sup>4</sup> *Id.*

<sup>5</sup> *Algonquin Gas Transmission, LLC*, Abbreviated Application of Algonquin Gas Transmission, LLC for a Certificate of Public Convenience and Necessity and For Related Authorizations, Docket No. CP14-96-000 (Feb. 28, 2014) ("Certificate Application").

of the AIM Project to IPEC, Entergy—as the owner and NRC-licensed operator of IPEC—has a demonstrated interest in the AIM Project, and no other party can adequately represent Entergy’s interests.<sup>6</sup>

Entergy noted in its NEPA scoping comments that the existing Algonquin pipeline system has been operating safely next to IPEC for several decades, and several evaluations of the potential hazards posed by the existing pipelines, conducted pursuant to NRC regulations and guidance, establish that the existing pipelines do not impair the safe operation of IPEC.<sup>7</sup> These analyses are part of the NRC design and licensing basis for both IP2 and IP3.<sup>8</sup> The proposed AIM Project, however, significantly expands the existing Algonquin system, including pipeline capacity and pressure. Thus, the potential for increased nuclear safety risks, including in terms of the probability and consequences of a potential malfunction or failure of the expanded natural gas pipeline near IPEC, must be evaluated in advance and found to be acceptable in accordance with applicable NRC regulations before implementing the proposed change. While such occurrences are unlikely, Entergy must analyze any increased risk and consequences of such events prior to FERC’s approval of the project. Depending on the results of the analysis, prior NRC review and approval of the new hazards analysis could be required before the project can be approved by FERC. As part of its review, NRC could request further information on the project or require additional measures to mitigate any potential hazards to IPEC. Such issues would have to be addressed before NRC could complete its review.

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<sup>6</sup> *Algonquin Gas Transmission, LLC*, Motion to Intervene and Comments of Entergy Nuclear Indian Point 1, LLC, *et al.* at 4, Docket No. CP14-96-000 (April 8, 2014).

<sup>7</sup> The NRC has independently evaluated the external hazards posed by these pipelines several times, including pre-licensing in 1973 and more recently in 2003 and 2008. Those evaluations considered the design and construction of the gas lines, operations and maintenance practices, postulated failure modes, and standoff distances to safety-related structures. NRC’s reviews have concluded that the existing pipelines do not adversely affect the safety and security of the plant. *See* Letter from NRC to the Honorable Sandra R. Galef, New York State Assembly, dated March 20, 2014 (ADAMS Accession No. ML14069A370).

<sup>8</sup> *See* IP3 Updated Final Safety Analysis Report (“UFSAR”), Rev. 3, Section 2.2.2, describing the existing pipelines and referencing a 2008 evaluation of potential hazards posed by the pipelines.

Entergy noted in its motion to intervene and comments that it had conducted a preliminary analysis of the alternatives described in Algonquin's Resource Report No. 10 and concluded that an expanded pipeline along the alternative Northern Route crossing of the Hudson River, in the existing easement, could introduce increased hazards to certain safety-related structures near or on the IPEC site. Accordingly, advance NRC review for the Northern Route crossing alternative would likely be required.<sup>9</sup> Algonquin's preferred Southern Route crossing, with its greater distance from IPEC safety-related structures (approximately .5 miles south of the existing crossing), did not appear to raise the same safety-related concerns, but advance NRC review and approval may also be necessary based on the Southern Route's proximity to other IPEC systems, structures, and components that, while located outside of the main plant area, are important to safety. Entergy noted that it was continuing its review of the AIM Project and alternatives and would provide further comments to FERC in accordance with the environmental review schedule.

## **II. COMMENTS ON DRAFT EIS FOR AIM PROJECT**

On August 6, 2014, FERC issued the Draft EIS for the AIM Project.<sup>10</sup> As it relates to IPEC, the Draft EIS states as follows:

Based on our consultation with NRC, Entergy is required to assess any new safety impacts on its IPEC facility and provide that analysis to the NRC. Algonquin has coordinated with Entergy to provide information about its proposed pipeline, and Entergy is currently performing a Hazards Analysis. To ensure that no new safety hazards would result from the AIM Project, we are recommending that Algonquin file the final conclusions regarding any potential safety-related conflicts with the IPEC based on the Hazards Analysis performed by Entergy.<sup>11</sup>

<sup>9</sup> Whether NRC would approve the proposed change would depend on the results of the Safety Evaluation and Hazards Analyses.

<sup>10</sup> *Algonquin Incremental Market Project, Draft Environmental Impact Statement*, Docket No. CP14-96-000 (August 6, 2014).

<sup>11</sup> Draft EIS at 5-15. The Draft EIS contains environmental hazard mitigation recommendations by FERC Staff, including the recommendation that Algonquin be required to file with FERC any potential safety-related conflicts with IPEC based on Entergy's Hazards Analysis and the recommendation that "[i]f, upon completion of the Hazards Analysis, additional mitigation measures are required to address safety-related issues or conflicts, prior to

FERC's conclusions in the Draft EIS were also based, in part, on the comments Entergy submitted to FERC to assist the Commission in identifying issues for evaluation in the EIS, referenced above.

As noted in Section I above, the 2008 evaluation of potential impacts posed by the existing natural gas pipelines on IPEC is referenced in the IP3 UFSAR and is part of the formal NRC design and licensing basis for IP2 and IP3. NRC's regulations in 10 C.F.R. § 50.59 require that proposed changes to (or potentially affecting) the nuclear plant be reviewed in advance for potential impacts on the plant's licensing basis. Such review is often undertaken in the form of a written Safety Evaluation. If the proposed change as considered in the Safety Evaluation satisfies one or more of the criteria in 10 C.F.R. § 50.59, prior NRC review and approval—in the form of a license amendment—is required.<sup>12</sup> If not, the licensee is allowed to make the change without prior NRC approval. Nevertheless, such changes are still subject to regulation and oversight by the NRC. For example, 10 C.F.R. § 50.59 Safety Evaluations are subject to inspection, examination and potential enforcement action by NRC. Further, a licensee must periodically submit a summary of the Safety Evaluations to the NRC for review. Thus, the NRC monitors changes to a plant (or its environs, as in this case) and may take or require remedial action including mandating changes to or disapproval of the proposed action.

As noted in the EIS, Entergy has worked closely with Algonquin over the past year to better understand the scope of the project, including proposed alternate routes, and to confer regarding means to avoid any potential adverse impacts to IPEC. These discussions have primarily focused on the final selected pipeline routing—the Southern Route. As discussed

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construction in the vicinity of the IPEC facility, Algonquin shall file with the Secretary, for review and written approval by the Director of OEP, a site-specific construction and mitigation plan for the IPEC developed in consultation with Entergy.” *Id.* at 5-25 (emphasis in the original) (the “Hazard Mitigation Measures”).

<sup>12</sup> See 10 C.F.R. § 50.59(c)(2).

below, Entergy would at this time oppose the alternate Northern Route or any other alternative routes that result in routing the new 42-inch diameter piping materially closer to IPEC.

#### **A. Evaluation of the Proposed Southern Route**

The Southern Route is further from IP2 and IP3 structures, systems and components (“SSCs”) within the IPEC Security Owner Controlled Area (“SOCA”), which is used to control access to the main plant area, than Algonquin’s existing pipeline system and the alternate Northern Route. However, the proposed new pipeline of the AIM Project has a larger diameter and operates at a higher pressure than the existing pipelines, thereby allowing it to transport larger volumes of natural gas. Also, the Southern Route is nearer to certain SSCs important to the safe and efficient operation of IP2 and IP3, including the Gas Turbine (“GT”) 2/3 Fuel Oil Storage Tank, Electrical Switchyard, Emergency Operations Facility (“EOF”), Meteorological Tower, and the City Water Tank. Accordingly, the new 42-inch pipeline would result in a change to IP2 and IP3 external hazards licensing basis, which did not consider such impacts. The impact of the AIM Project therefore must be evaluated in advance of construction pursuant to 10 C.F.R. § 50.59.

Given the proximity of the Southern Route to the above-listed SSCs, Algonquin and Entergy have conferred regarding means to avoid potential adverse impacts to the safe operation of IPEC. As a direct result of those efforts, Algonquin has agreed to implement additional Southern Route design and installation enhancements along approximately 3,935 feet of the pipeline to be located along the Southern Route in the Town of Cortlandt, near Broadway (MPs 4.6 to 5.3) (the “AIM Project IPEC-Related Safety Enhancements”). The AIM Project IPEC-Related Safety Enhancements include: (a) using 0.720 inch wall thickness and X-70 grade pipe that exceeds the most stringent Class 4 requirements set by US DOT; (b) installing two parallel

sets of fiber-reinforced concrete slabs (3 feet wide by 8 feet long by 6-inch thick) over the pipeline that will act as a physical barrier to impede access to the pipe along with yellow warning tape above the concrete slab and another yellow warning tape 1 foot above the pipe; (c) burying the pipeline deeper, including a minimum depth of 4 feet from the top of the pipeline (and an additional foot deeper when crossing Broadway, a major local street adjacent to IPEC); and (d) providing thicker external corrosion protection and internal coating. In addition, construction of the AIM Project in the vicinity of IPEC will not require blasting for rock removal in the region of the AIM Project IPEC-Related Safety Enhancements; Algonquin will ensure that traffic flow is maintained during construction and that access to IPEC will not be impeded; a Direct Current Voltage Gradient survey will be performed to ensure coating integrity following enhanced pipe installation and partial backfill; and 100% of all field welds of enhanced pipeline will be subject to Non-Destructive Examination radiography. The AIM Project IPEC-Related Safety Enhancements are in addition to Algonquin's agreement to implement and abide by its Standard Operating Procedures ("SOP") applicable to the AIM Project.

Consistent with applicable NRC regulations and guidance and based on the final proposed routing, existing pipeline safety procedures and the additional design and installation enhancements that Algonquin has committed to, Entergy prepared a 10 C.F.R. § 50.59 Safety Evaluation related to the proposed AIM Project. Entergy also prepared two supporting evaluations: (1) Consequences of a Postulated Fire and Explosion Following the Release of Natural Gas from the Proposed New AIM 42" Pipeline Taking a Southern Route Near IPEC and an Analysis of the Causes, and (2) Determination of Exposure Rates Associated with a Failure of the Proposed AIM 42" Natural Gas Pipeline Near IPEC (collectively referred to as the "Hazards Analyses"). Both supporting Hazard Analyses were prepared for Entergy by the same consultant

that prepared the hazards analysis for the existing pipelines near IPEC. Entergy submitted the 10 C.F.R. § 50.59 Safety Evaluation and Hazards Analyses to the NRC on August 21, 2014.<sup>13</sup>

As documented in the attached and publicly available 10 C.F.R. § 50.59 Safety Evaluation, Entergy has concluded that based on the proposed routing of the 42-inch pipeline further from safety related equipment at IPEC, and taking into account the substantial AIM Project IPEC-Related Safety Enhancements agreed to by Algonquin, the proposed AIM Project Southern Route poses no increased risks to IPEC and there is no significant reduction in the margin of safety. As documented in the 10 C.F.R. § 50.59 Safety Evaluation and supporting Hazards Analyses, Entergy has concluded that the change in the licensing basis external hazards analysis associated with the proposed AIM Project Southern Route does not require prior NRC approval. Accordingly, and based upon those analytical and regulatory assumptions, Entergy does not oppose FERC approval of the AIM Project with the selected Southern Route, assuming implementation of the AIM Project IPEC-Related Safety Enhancements.

As noted above, however, NRC has the right to review and challenge any analysis done pursuant to 10 C.F.R. § 50.59. Specifically, NRC may request additional information on the project and potential impacts on IPEC, disagree with Entergy's conclusions regarding such impacts, or require further mitigation measures. If that occurs, NRC's questions or concerns would, as a legal requirement, have to be addressed prior to construction of the AIM Project in the vicinity of IPEC. As part of that process, NRC conducted a preliminary inspection of the AIM Project 10 C.F.R. § 50.59 Safety Evaluation at IPEC during the week of September 22, 2014. NRC has not yet identified any concerns, but its review is ongoing. NRC also plans to conduct a further technical review of the supporting Hazards Analyses this fall. Entergy expects

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<sup>13</sup> The Safety Evaluation can be found at <http://pbadupws.nrc.gov/docs/ML1425/ML14253A339.pdf>. The supporting Hazards Analyses have been withheld from public disclosure as Security-Related Information pursuant to 10 C.F.R. 2.390.



the results of NRC's inspection and review to be available prior to the publication of the Final EIS for the AIM Project, currently scheduled for December 19, 2014. Entergy strongly advocates that prior to acting on Algonquin's Certificate Application for the AIM Project, FERC must confer with the NRC regarding the results of NRC's review of Entergy's 10 C.F.R. § 50.59 Safety Evaluation and supporting Hazards Analyses in order to become fully informed as to whether any additional mitigation is determined by NRC to be necessary for the segment of piping routed near IPEC.<sup>14</sup> If such additional mitigation is determined to be necessary to maintain the safety of IPEC, FERC should condition its grant of a certificate for the AIM Project on satisfactory implementation of such mitigation measures developed in consultation with Entergy and Algonquin.

In addition, Entergy strongly endorses the Hazard Mitigation Measures identified in the Draft EIS and urges FERC to adopt them in the final AIM Project EIS.

#### **B. Evaluation of the Alternate Northern Route**

Given Algonquin's selection of the Southern Route as the final selected pipe routing for the AIM Project, Entergy has not conducted a detailed analysis of the potential impacts of the Northern Route alternative, or other alternatives that may locate the new 42-inch line closer to IPEC. The Northern Route's addition of high-volume/high-pressure pipeline capacity closer to IPEC would require substantial additional safety analysis and, based on currently available information, could reduce the margin of safety thus requiring advance NRC review and approval. Therefore, at this time and based on selection of the 10 C.F.R. § 50.59-reviewed Southern Route,

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<sup>14</sup> A memorandum of agreement ("MOA") between the NRC and FERC was executed in 2009. In accordance with the MOA, the two agencies may consult with each other with regard to the availability of technical information that would be useful in areas of mutual interest. Entergy understands that NRC has contacted and informed FERC of NRC's involvement as a regulatory agency for IPEC.



September 29, 2014

**VIA ELECTRONIC FILING**

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

**Re: Comments on Algonquin Incremental Market Project Draft Environmental Impact Statement, Docket No. CP 14-96-000**

Dear Secretary Bose:

Riverkeeper, Inc. (Riverkeeper) submits the following comments on the Draft Environmental Impact Statement (DEIS) for the Algonquin Incremental Market Project (AIM Project or Proposed Project), Docket No. CP 14-96-000. The DEIS was made available via notice of the Federal Energy Regulatory Commission (FERC or Commission) dated August 6, 2014.

Riverkeeper is a member-supported watchdog organization dedicated to defending the Hudson River and its tributaries and protecting the drinking water supply of nine million New York City and Hudson Valley residents. Riverkeeper is actively involved in public education, advocacy, and litigation surrounding the issue of shale gas extraction and related infrastructure, particularly because of the potential impacts on New York State's drinking water supplies.

For the reasons set forth below, the DEIS fails to comply with the requirements of the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4231 et seq., in several significant respects, and must be revised and reissued for public review and comment. These deficiencies include: 1) incomplete information; 2) inadequate evaluation of impacts to water resources; 3) failure to include consideration of the Atlantic Bridge Project, which impermissibly segments environmental review; and 4) failure to provide a comprehensive analysis of cumulative impacts. Further, a number of additional mitigation measures related to water resources, as well as public disclosure of all construction and post-construction information related to the AIM Project, should be evaluated and included in a revised DEIS.

**I. Background**

The AIM Project spans four states and involves the replacement and expansion of approximately 37 miles of the existing Algonquin pipeline system, the upgrade of multiple

compressor stations, and the upgrade of existing and construction of new metering and regulating stations along the pipeline route. In New York, the project involves the take up and relay of more than 13 miles of pipeline, replacing the existing 26 inch pipe with a 42 inch pipe, approximately 2 miles of new pipeline, and a new Hudson River crossing. The New York portion of the AIM Project also includes the upgrade of 2 compressor stations and 2 metering and regulating stations. In all, the Proposed Project involves 39 waterbody crossings, 77 wetland crossings, and disturbance of approximately 24 acres of wetlands in New York.

The majority of the New York portion of the Proposed Project is located within the Hudson River watershed, while approximately 2 miles of pipeline replacement and the expansion of the Southeast Compressor Station are located within the New York City (NYC) drinking water supply watershed, which provides drinking water for 9 million New Yorkers. Specifically, portions of the AIM Project are located within the sensitive Croton watershed, part of the East of Hudson NYC watershed, where drinking water supply reservoirs are already impaired for phosphorus and must be carefully protected in order to avoid further degradation.<sup>1</sup>

Algonquin Gas Transmission, LLC (Algonquin or Applicant) submitted an application to FERC for a Certificate of Public Convenience and Necessity on February 28, 2014, following a pre-application and scoping process. Riverkeeper submitted comments regarding the scope of the DEIS on October 15, 2013<sup>2</sup> and on the application for a Certificate of Public Convenience and Necessity on April 8, 2014.<sup>3</sup> In those comments, Riverkeeper identified a number of issues of concern regarding water quality and urged FERC to take a hard look, as required by NEPA, at the Proposed Project's likely impacts on both the Hudson River and NYC watersheds, as well as potential cumulative impacts.

## **II. The DEIS Fails to Provide the “Hard Look” at Environmental Impacts Required by NEPA.**

Pursuant to NEPA, federal agencies must take environmental considerations into account in their decision-making “to the fullest extent possible.” 42 U.S.C. § 4332. Prior to approving any “major federal action significantly affecting the quality of the human environment,” federal agencies must comprehensively evaluate environmental impacts, including adverse environmental effects and the means of preventing them, in a “detailed statement.” *Id.* § 4332(2)(C). NEPA requires federal agencies to “take a ‘hard look’ at environmental consequences” and “provide for broad dissemination of relevant environmental information.”

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<sup>1</sup>The Proposed Project sites in the New York City (NYC) watershed drain to the New Croton Reservoir and the East Branch Reservoir, both of which are subject to a Total Maximum Daily Load for phosphorous. See New York State Department of Environmental Conservation (NYSDEC), Phase II Phosphorous Total Maximum Daily Loads for Reservoirs in the New York City Water Supply Watershed (2000), available at: [http://www.dec.ny.gov/docs/water\\_pdf/nycjune2000.pdf](http://www.dec.ny.gov/docs/water_pdf/nycjune2000.pdf).

<sup>2</sup> Riverkeeper Comments Regarding Scope of the Environmental Impact Statement for the Algonquin Incremental Market Project, Docket No. PF 13-16-000 (filed Oct. 15, 2013) (Scope Comments), incorporated fully by reference herein.

<sup>3</sup> Riverkeeper Comments on Abbreviated Application of Algonquin Gas Transmission, LLC for Certificate of Public Convenience and Necessity, Docket No. CP 14-96-000 (filed Apr. 8, 2014) (Application Comments), incorporated fully by reference herein.

*Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (internal citations omitted).

The public availability of information regarding the environmental impacts of a proposed action is central to NEPA, which requires agencies to make “high quality” information available to “public officials and citizens *before* decisions are made and *before* actions are taken.” 40 C.F.R. § 1500.1(b) (emphases added). Accordingly, “public scrutiny [is] essential to implementing NEPA.” *Id.* The preparation of an environmental impact statement (EIS) serves this mandate by “provid[ing] a springboard for public comment,” as NEPA “guarantees that the relevant information [concerning environmental impacts] will be made available to the larger audience that may also play a role in the decisionmaking process and the implementation of the decision.” *Robertson*, 490 U.S. at 349. The opportunity for public participation guaranteed by NEPA ensures that agencies will not take final action until after their analysis of the environmental impacts of their proposed action has been subject to public scrutiny. In situations where “data is not available during the EIS process and is not available to the public for comment ... the EIS process cannot serve its larger informational role, and the public is deprived of their opportunity to play a role in the decision-making process.” *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011).

In addition, an EIS must fully disclose and evaluate the complete range of environmental consequences of a proposed action, including “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural” impacts, “whether direct, indirect, or cumulative.” 40 C.F.R. §§ 1502.16(a), (b); 1508.8. As an “environmental full disclosure law,” *Monroe Cnty. Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697 (2d Cir. 1972), NEPA “ensures that an agency will not act on incomplete information, at least in part, by ensuring that the public will be able to analyze and comment on an action’s environmental implications.” *Ohio Valley Envtl. Coal. v. U.S. Army Corps of Eng’rs*, 674 F. Supp. 2d 783, 792 (S.D. W. Va. 2009) (internal quotation marks and citations omitted).

If a DEIS “is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft.” 40 C.F.R. § 1502.9(a). As discussed below, the DEIS falls far short of the standards prescribed by NEPA such that it precludes meaningful analysis of the environmental impacts of the Proposed Project, and must be revised and reissued for public review and comment.

#### **A. The DEIS is Incomplete.**

In Section 5.2 of the DEIS, Staff’s Recommended Mitigation, and throughout the DEIS, FERC identifies dozens of pieces of missing information and asks the Applicant to submit various documents either prior to the end of the comment period on the DEIS or prior to construction. The list of missing information includes, but is not limited to:

- ➔ Site-specific crossing plan for the Catskill Aqueduct.<sup>4</sup> (Recommended Mitigation #14; DEIS Section 4.3.2.1)

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<sup>4</sup> Draft Environmental Impact Statement for the Algonquin Incremental Market Project (Aug. 2014) (DEIS) at 5-21.

- ➔ Additional details regarding minimization of trench dewatering in New York.<sup>5</sup> (Recommended Mitigation #16; DEIS Section 4.3.2.6)
- ➔ Revised site-specific crossing plans incorporating additional avoidance or mitigation measures for two vernal pools in New York.<sup>6</sup> (Recommended Mitigation #17; DEIS Section 4.4.3.2)
- ➔ Site-specific information regarding the location of wetlands the Applicant believes would meet criterion for non-saturated conditions at the time of construction.<sup>7</sup> (Recommended Mitigation #18; DEIS Section 4.4.4)
- ➔ Final Compensatory Wetland Mitigation Plan.<sup>8</sup> (Recommended Mitigation #19; DEIS Section 4.4.5)
- ➔ Documentation that the Hudson River crossing is consistent with New York coastal policies.<sup>9</sup> (Recommended Mitigation #28; DEIS Section 4.8.4.1)
- ➔ Final AC/DC interference study for the West Point Transmission Project and any additional mitigation to address safety related concerns.<sup>10</sup> (Recommended Mitigation #41; DEIS Section 4.12.3)
- ➔ Final conclusions regarding potential safety-related conflicts with Indian Point Energy Center following completion of a Hazards Analysis by Entergy and, if additional mitigation is required, a site-specific construction and mitigation plan.<sup>11</sup> (Recommended Mitigation #42; DEIS Section 4.12.3)
- ➔ Site-specific plan for Harriman State Park, including additional avoidance or mitigation measures.<sup>12</sup> (DEIS Section 4.6.1.5)

Riverkeeper agrees with FERC that the information identified above and in Section 5.2 of the DEIS is necessary in order to determine the Proposed Project's environmental impacts and that it must be submitted by the Applicant as soon as possible. It must also be included in a revised DEIS so that it may be reviewed and evaluated by the public and other interested agencies and government bodies. FERC may not base its decision regarding environmental impacts from the Proposed Project on an incomplete environmental impact statement, nor may it circumvent the public review process by relying on an incomplete DEIS. In order to comply with NEPA, all information identified by FERC as missing from the DEIS must be prepared and

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<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

<sup>9</sup> *Id.* at 5-22.

<sup>10</sup> *Id.* at 5-25.

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 4-90.

submitted as soon as possible, and included and evaluated in a revised DEIS that is subsequently made available for public review and comment.

## **B. The Analysis of Impacts to Water Resources is Inadequate.**

Several issues related to potential impacts on water resources are either inadequately evaluated in or completely missing from the DEIS. As with the missing pieces of information identified by FERC, discussed in section II.A, above, these must also be addressed in a revised DEIS.

### ***1. The DEIS fails to address impacts and mitigation measures related to wetland buffers.***

The applicant proposes to mitigate unavoidable, construction-related impacts to wetlands by implementing specific wetland protection and restoration measures listed in the DEIS.<sup>13</sup> However, there is no direct consideration of wetland buffers and the only indirect consideration is the proposal to locate additional temporary workspace (ATWS) “at least 50 feet from wetland boundaries except where site-specific conditions warrant otherwise and FERC approval has been obtained...”<sup>14</sup>

The preservation and maintenance of buffer areas is critical to the protection of wetlands from construction activities and post-development stormwater runoff. Vegetated wetland buffers provide transitional areas that intercept stormwater from upland habitat before it reaches wetlands or other aquatic habitat. Buffers therefore maintain or improve water quality by trapping and removing various nonpoint source pollutants. Other water quality benefits of buffer zones include reducing thermal impacts (providing shade), nutrient uptake, infiltration, reducing erosion, and restoring and maintaining the chemical, physical and biological integrity of water resources. One hundred feet is considered the minimum buffer width recommended for water quality protection.<sup>15</sup>

Construction-related activities, including the establishment of ATWS, within 50 feet of wetlands not only pose threats to water quality but are subject to regulation at the state and local level, highlighting the importance of protecting buffer areas. The New York State Department of Environmental Conservation (NYSDEC) regulates activities within 100 feet of state wetlands.<sup>16</sup> In the New York City Watershed, the Towns of Cortlandt<sup>17</sup> and Yorktown<sup>18</sup> also regulate activities within 100 feet of local wetlands, as does the New York City Department of Environmental Protection (NYCDEP).<sup>19</sup> Nevertheless, the DEIS proposes construction activities within 50 feet of regulated wetlands and plans to request FERC approval for encroachment to

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<sup>13</sup> *Id.* at 4-61.

<sup>14</sup> *Id.*

<sup>15</sup> SCHUELER, T., *SITE PLANNING FOR URBAN STREAM PROTECTION*, Metropolitan Washington Council of Governments (1995), 111.

<sup>16</sup> See N.Y. E.C.L. § 24-0701(2).

<sup>17</sup> See Town of Cortlandt Town Code, Chapter 179, Freshwater Wetlands, Water Bodies, and Watercourses.

<sup>18</sup> See Town of Yorktown Town Code, Chapter 178, Freshwater Wetlands.

<sup>19</sup> See *e.g.*, Rules of the City of New York, Title 15, Chapter 18 § 18-39.

less than 50 feet for 23 existing wetlands within the project right of way (ROW).<sup>20</sup> Eleven of the proposed additional encroachments abut the wetland itself. While the DEIS claims these additional encroachments are necessary to create extra workspace for saturated soils and spoil storage, there is no analysis of the potential impacts to buffers or their associated wetlands due to the proposed wide-scale and intrusive disturbance from these construction activities.

Nor is there any mitigation proposed for impacts to wetland buffers. Although the DEIS proposes compensatory mitigation for wetland disturbances at a 2:1 ratio, it fails to demonstrate that the proposed ratio will result in the successful establishment of even a 1:1 ratio of wetlands when their buffers have been disturbed to within 0-50 feet of their delineated boundaries. As discussed earlier, buffers insulate wetlands from nutrient loading and other impacts, so impairing those functions will also impair the ability of the disturbed wetland to be restored.

For the above reasons, the DEIS must include an analysis of the impacts of proposed wetland buffer disturbances from construction activities, and must further propose mitigation measures for impacts. At a minimum, the applicant should restore disturbed wetland buffer areas to their natural grade and configuration, plant them with native vegetation, and monitor them for the successful establishment of plant communities. Unless the applicant can demonstrate that impacts to buffers can be avoided, minimized or adequately mitigated, FERC, NYSDEC and local municipalities should deny any requests for variances allowing further encroachment on and adverse impacts to wetland buffers, and require that the Proposed Project be revised to comply with state and local regulations regarding disturbance within 100 feet of regulated wetlands.

## ***2. The DEIS fails to evaluate potential significant impacts from stormwater runoff.***

The DEIS fails to include a meaningful evaluation of the impacts from increased stormwater runoff due to construction activities and long-term changes in surface drainage patterns caused by the Proposed Project. Rather, the DEIS merely mentions stormwater plans and management in passing, and, for the New York portions of the Proposed Project, references a Stormwater Pollution Prevention Plan (SWPPP) that has not been included in the DEIS.<sup>21</sup>

When construction activities remove vegetation and expose soils, forest canopies no longer intercept stormwater and root systems no longer hold soils in place. Stormwater runoff from construction sites may carry pollutants – such as debris, oil and other contaminants from equipment, and any herbicides used for vegetation clearing or ROW maintenance – from the project site to downstream wetlands, streams, and other waterbodies.<sup>22</sup> Construction site runoff

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<sup>20</sup> DEIS at 4-67—68.

<sup>21</sup> Riverkeeper notes that on September 2, 2104 we received a copy of the Stormwater Pollution Prevention Plan (SWPPP) for the New York portions of the project from the Applicant, who requested feedback by October 1, 2014. We are currently reviewing the SWPPP and will provide comments under separate cover. However, this does not remedy FERC's failure to evaluate stormwater impacts, including providing a copy of the SWPPP, in the DEIS.

<sup>22</sup> U.S. Environmental Protection Agency (EPA), Stormwater Discharges from Construction Activities, available at: <http://cfpub.epa.gov/npdes/stormwater/const.cfm>.

can also erode exposed soils and transport sediment to receiving waters.<sup>23</sup> Suspended sediment in aquatic systems degrades aquatic wildlife habitat, reduces species diversity and damages commercial and recreational fisheries.

In addition, nutrients and toxic materials, including pesticides, industrial wastes, and metals, can bind to silt and clay particles that runoff transports to waterbodies. Sediment particles also shield pathogenic microorganisms such as *Giardia* and *Cryptosporidium* from detection, which can result in waterborne disease outbreaks. Long-term changes in hydrology and surface drainage patterns may also result from construction activities, particularly in areas, such as steep slopes, where changes in ground cover and topography can increase stormwater runoff, reduce the ability of natural systems to filter pollutants, and permanently alter drainage patterns.<sup>24</sup>

Consideration of impacts from stormwater runoff is important throughout the project, particularly so within the NYC watershed. As noted above, the NYC watershed provides drinking water to 9 million New Yorkers daily, and the Proposed Project is located within a sensitive portion of the East of Hudson NYC watershed that is already impaired and subject to enhanced water quality protection criteria. Riverkeeper raised the importance of evaluating stormwater impacts from the Proposed Project and requested inclusion of the SWPPP in the DEIS in previous comments to FERC on the scope of the DEIS and on the project application.<sup>25</sup> In a letter to the Applicant dated April 10, 2014, FERC also requested that the Applicant provide a copy of the SWPPP in preparation for the DEIS;<sup>26</sup> however, none has been included.

In order to protect against water quality degradation that may potentially result from stormwater runoff, FERC must include a full analysis of potential stormwater impacts, including a complete SWPPP, in a revised DEIS. This analysis must include a description of how the pipeline construction schedule will be phased to coordinate with control measures contained in the SWPPP, as well as a consideration of alternative construction practices that can be used to avoid or reverse soil compaction and thereby prevent runoff volume.

### ***3. The DEIS must include a detailed evaluation of likely impacts and mitigation measures for the 2 vernal pools located within the Hudson River watershed.***

The DEIS lists 2 vernal pools in New York, located within the Hudson River watershed in the Town of Cortlandt, that will be directly affected by construction of the Proposed Project.<sup>27</sup> In all, construction will directly impact nearly 2,000 square feet of vernal pool habitat. While the DEIS notes that, in general, vernal pools “provide habitat for many species” and that rare species are known to use vernal pools in the project area, there is no discussion or evaluation of the

<sup>23</sup> EPA, Construction Site Management Measure III. Construction Activities (last visited Sep. 29, 2014), available at: <http://water.epa.gov/polwaste/nps/czara/ch4-3a.cfm>.

<sup>24</sup> NYSDEC, New York Standards and Specifications for Erosion and Sediment Controls (Aug. 2005) at 1.3, available at: [www.dec.ny.gov/docs/water\\_pdf/bluebook.pdf](http://www.dec.ny.gov/docs/water_pdf/bluebook.pdf).

<sup>25</sup> Scope Comments at 4-5; Application Comments at 2-3.

<sup>26</sup> Federal Energy Regulatory Commission, Letter to Mr. Berk Donaldson, Director, Rates and Certificates NE, Spectra Energy Corporation, Re Environmental Data Request – Part 1 (Apr. 10, 2014).

<sup>27</sup> DEIS at 4-63, Table 4.4.3-2.



potential impacts upon the 2 vernal pools that would be directly affected by construction. In fact, as noted above in section II.A, the DEIS is missing final, site-specific crossing plans and avoidance and/or mitigation measures for these 2 vernal pools, which FERC has requested from the Applicant.

All information regarding site-specific crossing plans and avoidance and/or mitigation measures must be submitted by the Applicant as soon as possible and included in the DEIS. In addition, the DEIS must include a comprehensive, site-specific evaluation of the potential impacts to these 2 vernal pools. This must include a bioassay survey to determine the specific kinds of wildlife supported by each vernal pool, as well as discussion of restricted construction windows for pools that are assumed to support amphibians in the spring and fall. Without this information, FERC cannot assess the potentially significant impacts to these sensitive resources.

#### ***4. The DEIS must evaluate potential impacts to the Ramapo River Basin Aquifer System.***

The Proposed Project would cross approximately 0.6 mile of the Ramapo River Basin Aquifer System, a U.S. Environmental Protection Agency (EPA) designated sole source aquifer that serves as the water source for more than 300,000 people in New York and New Jersey.<sup>28</sup> Even though EPA notes that the aquifer is “vulnerable to contamination from many sources” and that the “potential exists for incidents of surface water contamination to affect public supply wells,”<sup>29</sup> the DEIS includes no meaningful analysis of the AIM Project’s effect on this important resource. Rather, the Ramapo Basin Aquifer is only briefly mentioned before the DEIS concludes, without any real analysis, that the Proposed Project will not significantly impact groundwater resources.

The DEIS’s generic discussion of impacts to groundwater water resources is insufficient. In order to ensure protection of a resource that serves as the sole source of drinking water for hundreds of thousands of people, the DEIS must include an assessment of the specific threats to the Ramapo River Basin Aquifer System and of measures to avoid, minimize, or mitigate those threats. This assessment must include alternatives to construction in the Ramapo Basin Aquifer.

#### **C. FERC Has Impermissibly Segmented Environmental Review by Failing to Include an Evaluation of Algonquin’s Atlantic Bridge Project in the DEIS.**

The DEIS must include an evaluation of the Atlantic Bridge Project, which will upgrade and expand additional segments of the Algonquin pipeline system. As with the Proposed Project, the Atlantic Bridge Project will be implemented by the Applicant and involves expansion of the Algonquin pipeline system in portions of New York, Connecticut, Rhode Island, and Massachusetts, with a projected in service date of November 2017. In New York, the Atlantic Bridge Project would cross approximately 4 miles of the East of Hudson NYC watershed, taking up the existing 26 inch pipe and replacing it with a 42 inch pipe, and involve

<sup>28</sup> EPA, Ramapo Aquifer Systems (Aug. 1992), available at: <http://www.epa.gov/region2/water/aquifer/ramapo/ramapo.htm>. Note that EPA’s count of population served by the Ramapo River Basin Aquifer Systems is likely highly underestimated, as the document dates to 1992.

<sup>29</sup> *Id.*

an additional upgrade of the Southeast Compressor Station, which is also located within the NYC watershed. Algonquin has completed an open season<sup>30</sup> for the project, and “plan[s] to move forward.”<sup>31</sup>

Pursuant to the regulations implementing NEPA, an EIS must include: 1) connected actions, including those that are “interdependent parts of a larger action and depend on the larger action for their justification;” 2) cumulative actions, “which when viewed with other proposed actions have cumulatively significant impacts;” and 3) similar actions, “which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together.” 40 C.F.R. § 1508.25(a). Accordingly, “[a]n agency impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration.” *Delaware Riverkeeper Network, et al. v. Federal Energy Regulatory Commission*, 753 F.3d 1304, 1313 (D.C. Cir. 2014).

In *Delaware Riverkeeper Network*, the Court found that FERC violated NEPA when it segmented environmental review of four separate proposals by Tennessee Gas Pipeline Company to upgrade different sections of the Eastern Leg of its 300 Line. Finding that the four projects were “certainly ‘connected actions,’” the Court explained:

“There is a clear physical, functional, and temporal nexus between the projects. There are no offshoots to the Eastern Leg. The new pipeline is linear and physically interdependent; gas enters the system at one end, and passes through each of the new pipeline sections and improved compressor stations on its way to extraction points beyond the Eastern Leg. The upgrade projects were completed in the same general time frame, and FERC was aware of the interconnectedness of the projects ... [t]he end result is a new pipeline that functions as a unified whole thanks to the four interdependent upgrades.”

752 F.3d at 1308-1309. The Court went on to dismiss claims that there were logical termini between any of the new upgrade segments or that any possessed substantial independent utility apart from the others, finding that the projects were “inextricably intertwined” as part of the same linear pipeline. *Id.* at 1315-1317.

The Atlantic Bridge Project falls into all three categories of actions that must be evaluated in a DEIS pursuant to 40 C.F.R. § 1508.25(a). First, the Proposed Project and the Atlantic Bridge Project are clearly connected actions, as both are interdependent parts of a larger action: the upgrade of the Algonquin pipeline system. Both projects involve upgrade and

<sup>30</sup> The Applicant held an open season to gauge market interest in the Atlantic Bridge Project earlier this year. See Spectra, Atlantic Bridge Project: Open Season Notice for Firm Service February 5, 2014 – March 31, 2014 (last visited Sep. 28, 2014), available at: <https://infopost.spectraenergy.com/GotoLINK/GetLINKdocument.asp?Pipe=10076&Environment=Production&DocumentType=Notice&FileName=Atlantic+Bridge+Project+Open+Season.pdf&DocumentId=8a7842c943fed9190143ff70248c0028>.

<sup>31</sup> Spectra, New Projects and Our Process: Atlantic Bridge Project (last visited Sep. 25, 2014), available at: <http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge>.

expansion of different segments of the Algonquin pipeline system, with several sections of both projects involving the take up of existing 26 inch pipe and replacing it with larger 42 inch pipe. The pipeline is linear, running in a line from New Jersey through New York, Connecticut, Rhode Island, and Massachusetts before branching. Further, the finished projects will function as a unified whole, as they involve replacing and expanding sections of the same linear pipeline system. The projects are also closely connected in time, as the Atlantic Bridge Project's projected in service date is only one year later than the AIM Project and there will be overlaps in construction.

Second, as discussed in section II.D below, the AIM and Atlantic Bridge Project are cumulative actions, as each would affect many of the same resources in the same area, including the NYC watershed, and the combined, incremental effect of each has the potential to be cumulatively significant. Finally, there is no question that the projects are similar actions, and that the Atlantic Bridge Project is a reasonably foreseeable action under NEPA. The Atlantic Bridge Project shares many similarities with the AIM project, as discussed above, and will be constructed within a similar timeframe.

Moreover, although the Applicant has not yet, to our knowledge, submitted an application to FERC for the Atlantic Bridge Project, the project has been announced and is moving forward. Algonquin has executed an agreement with Unitil, a natural gas distribution company, and has completed an open season for the project.<sup>32</sup> The company has also scheduled informational meetings to review the project with members of the public. One such meeting is in fact scheduled in Yorktown Heights, New York on September 29, 2014,<sup>33</sup> the day that the public comment period on the AIM Project DEIS closes.

In addition, the portion of the Atlantic Bridge Project located in New York appears to overlap with an earlier version of the AIM Project that was proposed in the Applicant's initial draft Environmental Report in July 2013. According to a map submitted with the Applicant's July 2013 draft Environmental Report, attached as Appendix A, the AIM Project was initially proposed within a much larger section of the NYC watershed, spanning from Cortlandt, New York to Somers, New York. The AIM Project was later modified to the current proposal, wherein the portion of the project in the NYC watershed was shortened to an approximately 2 mile segment from Cortlandt, New York to Yorktown, NY. The Atlantic Bridge Project would include a 4 mile segment in the NYC watershed, beginning in Yorktown, NY and appearing to run northeast toward Somers, New York. See map attached as Appendix B. Therefore, it appears that at least the New York portion of the Atlantic Bridge Project was proposed as a part of the AIM Project, then later broken into a separate project.

Given the interconnectedness of the Proposed Project and the Atlantic Bridge Project – which would upgrade and expand the same pipeline system, in the same area, affecting many of

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<sup>32</sup> *Id.*

<sup>33</sup> Town of Yorktown, New York, Algonquin Gas Transmission Will Hold Informational Meeting for Atlantic Bridge Expansion Project (last visited Sep. 25, 2014), available at: <http://www.yorktownny.org/community/algonquin-gas-transmission-will-hold-informational-meeting-atlantic-bridge-expansion>.

the same resources, over the same general time period – the DEIS must include a review and analysis of both projects.

#### **D. The DEIS Fails to Provide a Comprehensive Analysis of Cumulative Impacts.**

The cumulative impacts analysis in the DEIS is woefully inadequate and fails to evaluate a number of “past, present, and reasonably foreseeable future actions” that are likely to combine with the effects of the Proposed Project to create cumulative impacts on water resources, climate change, and other aspects of the environment. The cumulative impacts analysis must be revised to comply with the requirements of NEPA.

Under NEPA, an EIS must include an evaluation of cumulative impacts,<sup>34</sup> defined as:

“[T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

40 C.F.R. § 1508.7. *See also Oregon Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1132–33 (9th Cir. 2007) (“One of the specific requirements under NEPA is that an agency must consider the effects of the proposed action in the context of all relevant circumstances, such that where several actions have a cumulative . . . environmental effect, this consequence must be considered in an EIS.”) (internal quotation marks and citations omitted). Assessing the impacts of a proposed action within the context of existing and foreseeable effects in the same area yields “a realistic evaluation of the total impacts” and ensures that an EIS does not impermissibly “isolate a proposed project, viewing it in a vacuum.” *Grand Canyon Trust v. Fed. Aviation Admin.*, 290 F.3d 339, 342 (D.C. Cir. 2002).

First, the DEIS must include an analysis of cumulative impacts from the Atlantic Bridge Project, discussed in section II.C above. The Atlantic Bridge project is being constructed in the same area of the Proposed Project, during the same general timeframe, and would affect many of the same resources, including the East of Hudson NYC watershed. It is also being undertaken by the Applicant, meaning that details regarding project plans and likely impacts should be readily available to FERC upon request.

The DEIS does include a brief mention of the Atlantic Bridge Project, before concluding that “[b]ecause the Atlantic Bridge Project would not occur at the same time as the AIM Project, and because details are not known, it is not considered further in this analysis.”<sup>35</sup> This is not sufficient to satisfy NEPA’s requirements. The projects will be constructed during similar timeframes, with the AIM Project scheduled for construction in 2015 and the Atlantic Bridge Project scheduled for construction in 2015 and 2016.<sup>36</sup> In addition to the overlap in 2015, the

<sup>34</sup> NEPA requires an analysis of “direct effects” and “indirect effects.” 40 C.F.R. § 1502.16(a),(b). The term “effects” includes those that are “direct, indirect, or cumulative.” *Id.* § 1508.8.

<sup>35</sup> DEIS at 4-272.

<sup>36</sup> *Id.*

timeframe for construction of the Atlantic Bridge Project is well within the timeframe of long-term, and even many short-term, impacts from the AIM Project.

Given that the projects will impact many of the same resources, using presumably many of the same construction methods by the same company, it is difficult to believe that FERC is unable to evaluate the expected environmental impacts from the Atlantic Bridge Project, as they should be remarkably similar to those of the AIM Project. For example, the Atlantic Bridge Project, as the AIM Project, would be constructed within the East of Hudson NYC watershed – replacing the existing 26 inch pipe with an expanded 42 inch pipe. Both projects risk causing short and long term impacts in the NYC watershed due to increased stormwater runoff, changes in drainage patterns, and disturbance of wetlands. These similar impacts must be considered together in the DEIS in order to provide a comprehensive evaluation of the potential impacts of the Proposed Project.

Second, the DEIS must include an analysis of any cumulative impacts from residential and/or commercial development projects in the East of Hudson NYC watershed that may be constructed within the same period of time as the Proposed Project. As part of the Environmental Report submitted with its application on February 28, 2014, the Applicant noted that various development and redevelopment projects in the NYC watershed may have cumulative impacts on resources when combined with the Proposed Project.<sup>37</sup> However, even this cursory identification of watershed development projects, which falls far short of NEPA's required cumulative impacts evaluation, is not included in the DEIS. Instead, the cumulative impacts analysis contained in the DEIS completely ignores the existence of residential and/or commercial development projects within the East of Hudson NYC watershed, projects which fall squarely within the zone of cumulative impacts analysis required by NEPA. Development projects which occur in the East of Hudson NYC watershed would have similar impacts upon water and wetland resources in that area, as they often result in grading during construction, clearing of trees and other vegetation, disturbance of wetlands and buffer areas, increased stormwater runoff, and long-term changes in drainage patterns. Moreover, development projects planned for construction in the same window of time as the Proposed Project are easily identifiable by contacting watershed towns, which must approve proposed projects and will have records of environmental impacts and anticipated construction windows.

The DEIS must include identification and evaluation of each residential and/or commercial development project planned for construction in the East of Hudson NYC watershed during the same anticipated construction timeframe as the Proposed Project. The likely impacts from these projects, along with the Applicant's plans for minimizing those impacts, must be detailed in the DEIS and comprehensively evaluated for potential cumulative impacts to the NYC watershed.

Third, the DEIS must include an evaluation of the impacts associated with increased industrial gas extraction activities that will be facilitated by the AIM Project, which will considerably expand natural gas delivery capacity in the Northeast region and therefore increase demand for gas extraction. The DEIS notes and quickly dismisses any potential cumulative

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<sup>37</sup> Algonquin Incremental Market Project, Resource Report 1: General Project Description (Feb. 2014), Table 1.14-1, at 1-65 – 1-68.

impacts from increased natural gas extraction, concluding that shale development occurs too far outside the project area to be considered further.<sup>38</sup> This ignores the potential for regional level impacts on airsheds, watersheds, and other resources from increased industrial gas development, as well as the potential climate change impacts, discussed below.

Finally, the DEIS must include substantive consideration of the Proposed Project's likely cumulative impacts on climate change. Emissions of greenhouse gases (GHGs) associated with natural gas extraction, production, processing, transport, and infrastructure will be significantly increased by the AIM Project. According to the DEIS, taken together, potential estimated emissions of carbon dioxide equivalent (CO<sub>2</sub>e) from the Proposed Project's modifications to compressor stations alone will total more than 325,000 tons per year.<sup>39</sup> In addition to emissions from operation of the pipeline and related infrastructure, there are also likely to be increases in methane emissions associated with the increased extraction of natural gas facilitated by the AIM Project. Because methane is a significantly more potent greenhouse gas than carbon dioxide<sup>40</sup> and recent studies have found that the amount of methane currently emitted into the atmosphere from the natural gas supply chain has been considerably underestimated by regulators,<sup>41</sup> increased methane emissions as a result of this project have the clear potential to be a contributor to global climate change that must also be addressed in the DEIS.

The DEIS mentions climate change only briefly, as part of the cumulative impacts analysis, before concluding that "there is no standard methodology to determine how a project's relatively small incremental contribution to GHGs would translate into physical effects on the global environment."<sup>42</sup> This statement is, in fact, incorrect. EPA and other federal agencies use the social cost of carbon protocol to estimate climate benefits of agency actions and the economic costs associated with small increases in carbon dioxide.<sup>43</sup> In fact, a federal court recently rejected an environmental review conducted by federal agencies under NEPA for failing to estimate the costs associated with increases in GHG emissions. The Court disagreed with the agencies' assertion that it was not possible to estimate the incremental effects of GHG emissions, precisely due to the availability of the social cost of carbon protocol. *High County Conservation Advocates, et al. v. United States Forest Service, et al.*, 44 E.L.R. 20144 (Dist. Colo. 2014) (finding it was "arbitrary and capricious to quantify the *benefits* ... and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible") (emphasis in original). Accordingly, an evaluation of the Proposed Project's cumulative impacts

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<sup>38</sup> DEIS at 4-276.

<sup>39</sup> *Id.* at 4-231 – 4-233, Tables 4.11.1-7 – 4.11.1.11.

<sup>40</sup> According to the Intergovernmental Panel on Climate Change (IPCC), methane is at least 86 times more potent than carbon dioxide over a 20 year period, and at least 34 times more potent over a 100 year period. *See* IPCC, Climate Change 2013, The Physical Science Basis: Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013), Chapter 8, Table 8.7, at 714.

<sup>41</sup> *See* Miller, et al., "Anthropogenic emissions of methane in the United States," *Proceedings of the National Academy of Sciences*, Vol. 110(50) (published ahead of print Nov. 25, 2013), available at: <http://www.pnas.org/gca?allch=citmgr&submit=Go&gca=pnas%3B110%2F50%2F20018>; Brandt, et al., "Methane Leaks from North American Natural Gas Systems," *Science*, Vol 343, No. 6172 (Feb. 14, 2014), available at: <http://www.sciencemag.org/content/343/6172/733.summary>.

<sup>42</sup> DEIS at 4-286.

<sup>43</sup> EPA, The Social Cost of Carbon (last visited Sep. 28, 2014), available at: <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html>.

on climate change must be included in the DEIS to the fullest extent possible given the court acknowledged tools that are available.

### **III. The DEIS Should Include Additional Mitigation and Public Disclosure Measures.**

NEPA requires that an EIS contain a discussion of “mitigation measures” for avoiding, minimizing, rectifying, reducing, or compensating for environmental impacts. 40 C.F.R. §§ 1502.16; 1508.20. The following additional mitigation measures should be evaluated and included in the DEIS in order to minimize impacts on water resources. The DEIS should also discuss measures to ensure that information related to construction and post-construction activities is made available to the public in a timely and accessible manner.

#### ***1. The Applicant should be required to implement additional mitigation measures for the Hudson River HDD crossing.***

The Applicant plans to use horizontal directional drilling (HDD) to install a section of new, 42 inch pipeline under the Hudson River. Riverkeeper agrees with FERC’s assessment that if the use of HDD in the location identified by the Applicant is unsuccessful, the Applicant is required to obtain new authorizations for any requested change in location or crossing method.<sup>44</sup>

However, FERC should require the Applicant to include additional mitigation measures for the planned Hudson River HDD crossing. According to the discussion provided in the DEIS, “results of the preliminary hydraulic fracture evaluation suggest a relatively high potential for hydraulic fracture in the soft sediments of the Hudson River HDD alignment.”<sup>45</sup> While the Applicant has agreed to implement “proper containment structures” should an inadvertent release of drilling fluid occur, there is no discussion of preventative measures that would be taken to ensure that an inadvertent release does not occur. Given the admittedly high likelihood of an inadvertent release, as well as the very real possibility that such a release would be difficult to observe due to river traffic and existing turbidity, the Applicant should be required to implement containment structures prior to beginning drilling in the nearshore area. It is far easier and less environmentally risky to implement preventative measures to avoid a release than to attempt to contain a release that is already occurring.

The DEIS should also assess the benefits of real time monitoring of the HDD drilling operation and water quality in the vicinity of the drilling, to ensure that any loss of drilling fluid into the environment would be quickly discovered and stopped. Riverkeeper called for an evaluation of monitoring of HDD operations in our comments on the scope of the DEIS,<sup>46</sup> but it has not been included in the current draft.

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<sup>44</sup> DEIS at 2-36.

<sup>45</sup> *Id.* at 4-45.

<sup>46</sup> Scope Comments at 2-3.

***2. The Invasive Species Control Plan should be revised to require seeding, planting, and monitoring of native wetland vegetation.***

The DEIS references the Applicant's Invasive Species Control Plan (ISCP) when describing mitigation for construction related impacts to wetlands.<sup>47</sup> The ISCP proposes to control the spread of common reed, purple loosestrife, Japanese knotweed and glossy buckthorn, which are invasive plant species that in many cases are well established and comprise over 90% of the vegetative cover.<sup>48</sup> Common reed (*Phragmites*) and purple loosestrife are in fact well-suited to wetland soils and hydrology because they are obligate hydrophytes that establish and persist in such conditions.

The ISCP, however, proposes to seed restored wetland ROWs with ryegrass, an upland species not suited for establishment in wetlands, within six days of regrading. Ryegrass is well suited to stabilize disturbed soils in upland areas, but it is unlikely to establish in wetland areas, especially where standing water exists. Instead, the ISCP should require seeding, planting and monitoring of native wetland vegetation where wetlands have been disturbed by construction activities.

***3. The DEIS should include an explicit prohibition on the use of chemical additives in hydrostatic test water.***

In our comments on Algonquin's application for a Certificate of Public Convenience and Necessity, Riverkeeper urged FERC to include a prohibition on the use of chemical additives during hydrostatic testing – which risks contaminating waterbodies and watersheds when the test water is disposed of – as a condition of project approval.<sup>49</sup> Algonquin agreed to this request within the NYC watershed in its response to our comments.<sup>50</sup> However, the DEIS merely notes that the Applicant is “not proposing to use any chemicals for testing or for drying the pipeline following hydrostatic testing.”<sup>51</sup> The DEIS should include as a recommended condition for approval a prohibition on the use of chemical additives in hydrostatic test water throughout the project, including but not limited to the portions located within the NYC watershed.

***4. The Applicant should be required to provide third-party, pre- and post-construction testing and monitoring for water supply wells within the project area.***

The DEIS lists dozens of water supply wells within 150 feet of the construction work area for the Proposed Project, some of which may be proximal to blasting. The list includes 47 water supply wells in New York. The Applicant has agreed to offer pre-and post-construction

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<sup>47</sup> DEIS at ES-4, ES-10, 4-62.

<sup>48</sup> Algonquin Incremental Market Project, Resource Report 3: Fish, Wildlife, and Vegetation (Feb. 2014), Appendix F, *Invasive Species Control Plan*.

<sup>49</sup> Application Comments at 4.

<sup>50</sup> Motion for Leave to Answer and Answer of Algonquin Gas Transmission, LLC, Docket No. CP14-96-000 (Apr. 23, 2014) at 19.

<sup>51</sup> DEIS at 4-54.



monitoring of well yield and water quality and has been instructed to report water supply well complaints within 30 days of placing the AIM Project in service.<sup>52</sup>

While well monitoring and reporting of complaints are a good first step, Riverkeeper urges FERC to require the Applicant to conduct comprehensive, third-party pre- and post-construction well testing and ongoing monitoring of all potentially affected water supply wells. The Applicant should be required to test and monitor for a specified list of potential contaminants, which should be included in the DEIS, as well as for water yield. Finally, any reports regarding water supply well complaints and/or contamination should be made available to the public, as well as to FERC.

***5. The Applicant should be required to implement additional mitigation measures to protect fisheries resources and aquatic biota.***

Section 4.6.2.3 of the DEIS discusses impacts and mitigation measures regarding fisheries and aquatic resources that could be affected by construction of the Proposed Project. While Riverkeeper agrees with the use of the mitigation measures recommended by NYSDEC and included in the DEIS,<sup>53</sup> they alone are insufficient to protect fisheries and aquatic biota that may be negatively impacted by the 39 waterbody crossings planned in New York. In addition to the mitigation measures detailed in the DEIS, the Applicant should be required to collect baseline data regarding pre-construction waterbody and water quality conditions. This should include photo documentation of the pre-existing stream conditions, as requested by the Connecticut Department of Energy and Environmental Protection,<sup>54</sup> as well as pre-construction water quality testing. The Applicant should then be required to follow up with post-construction water quality testing in order to ensure that restoration measures have been successful, and, if they have not, with the implementation of additional measures.

***6. The Applicant should be required to publicly disclose all construction and post-construction plans, reports, and monitoring.***

Given the significant public interest in the Proposed Project, as well as the number of individuals and communities that will be affected, the Applicant should be required to disclose all construction and post-construction plans, reports, and monitoring on a publicly accessible website. To the extent that this information is already included in the Environmental Report and the DEIS, it should be relatively easily for the Applicant to include it on a dedicated website, which can then be updated with construction and post-construction information as it becomes available.

#### **IV. Conclusion**

For the reasons set forth above, the DEIS contains substantial flaws and fails to meet NEPA's mandate that FERC take a hard look at the potentially significant environmental impacts associated with the AIM Project. Accordingly, the DEIS must be revised and resubmitted for

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<sup>52</sup> *Id.* at 4-34.

<sup>53</sup> *Id.* at 4-98 – 4-99.

<sup>54</sup> *Id.* at 4-98.

public review and comment before FERC makes any decision regarding the Applicant's request for a Certificate of Public Convenience and Necessity.

Sincerely,

A handwritten signature in blue ink that reads "Misti Duvall". The signature is written in a cursive, slightly slanted style.

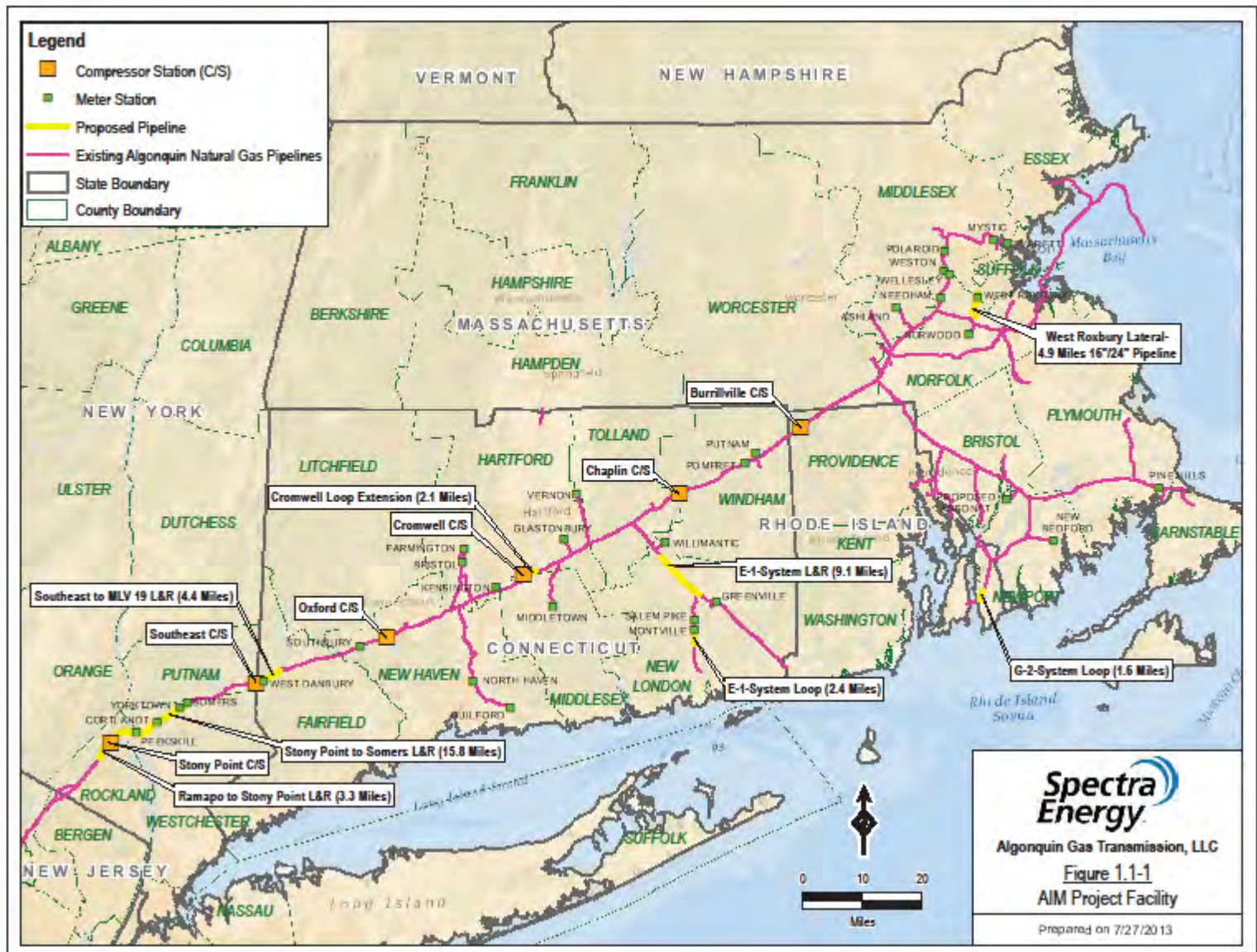
Misti Duvall  
Staff Attorney

A handwritten signature in blue ink that reads "William Wegner". The signature is written in a cursive, slightly slanted style.

William Wegner  
Staff Scientist

# **APPENDIX A**

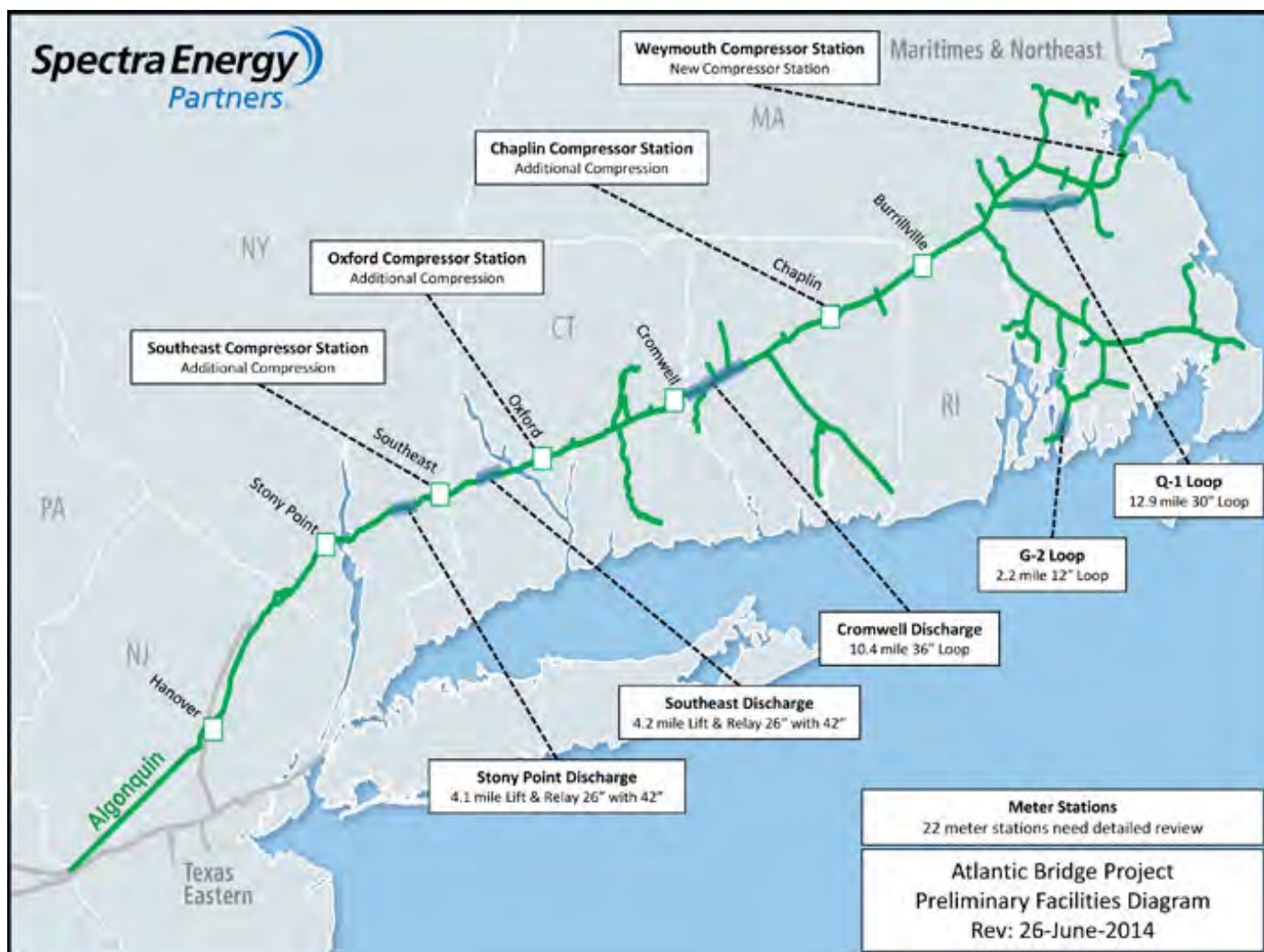
## **July 2013 Proposed Project Map**



Source: Algonquin Incremental Market Project, Resource Report 1: General Project Description, Pre-Filing Draft, Docket No. PF13-16-000 (Jul. 2013) at 1-2, Figure 1.1-1.

# **APPENDIX B**

## Atlantic Bridge Project Map



Source: Spectra Energy, Atlantic Bridge Project (last visited Sep. 29, 2014), available at: [http://www.spectraenergy.com/content/inline-images/Maps/map\\_atlantic\\_bridge\\_full2.jpg](http://www.spectraenergy.com/content/inline-images/Maps/map_atlantic_bridge_full2.jpg).

## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at White Plains, NY this 29<sup>th</sup> day of September, 2014.



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Misti Duvall  
Staff Attorney  
Riverkeeper, Inc.

Document Content(s)

RVK comments AIM DEIS.9.29.14.Final.PDF.....1-22



**ALGONQUIN GAS TRANSMISSION, LLC**

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P.O. Box 1642  
Houston, TX 77251-1642



September 29, 2014

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
Transmittal Letter for Response to DEIS

Dear Ms. Bose:

On February 28, 2014, Algonquin Gas Transmission, LLC (“Algonquin”) filed with the Federal Energy Regulatory Commission an Abbreviated Application for Certificate of Public Convenience and Necessity and for Related Authorizations for the Algonquin Incremental Market Project (“AIM Project”) in the above-referenced docket. On August 6, 2014, the Commission Staff issued its Draft Environmental Impact Statement (“DEIS”) for the Project, including requests for information as part of Staff’s mitigation recommendations (“Staff Requests”) and establishing a deadline for comments on the DEIS of September 29, 2014. On September 2, 2014, and September 19, 2014, Algonquin submitted responses to certain of the Staff Requests.

In Attachment A of this submission, Algonquin responds to each Staff Request that was not addressed in the two prior responses. Additionally, Algonquin is hereby submitting its comments on the DEIS in Attachment B hereto. Algonquin’s comments address (i) the withdrawal of the request for authorization for the proposed Yorktown contractor/pipe yard, (ii) the status of the northern long-eared bat, (iii) AIM Project air emissions, and (iv) cumulative impacts of the AIM Project and Algonquin’s Atlantic Bridge Project, which is currently under development. Algonquin is also suggesting certain clarifications to the DEIS, which are listed in tabular form in Attachment C. None of Algonquin’s responses or comments result in substantial changes in the proposed action or provide significant new circumstances or information relevant to environmental concerns.<sup>1</sup>

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<sup>1</sup> 40 C.F.R. § 1502.9 (2013).

Ms. Kimberly D. Bose, Secretary

September 29, 2014

Page 2

If you have any questions regarding this filing, please contact me at (713) 627-4488 or Chris Harvey, Director, Rates and Certificates at (713) 627-5113.

Respectfully submitted,

/s/ Berk Donaldson  
Berk Donaldson

Enclosure

cc: Maggie Suter (FERC)

## **Attachment B**

## **DEIS COMMENTS**

### ***Yorktown Pipe Yard.***

Algonquin is no longer proposing to utilize a pipe and contractor ware yard at the Granite Knolls West Park in the Town of Yorktown. Accordingly, Staff should revise the DEIS to reflect that Algonquin is withdrawing its proposal to use the ware yard in the Town of Yorktown.<sup>1</sup>

### ***Northern long-eared bat.***

The northern long-eared bat is currently proposed for federal listing as an endangered species with a final rule now anticipated in April 2015.<sup>2</sup> The description of the timing of the final rule in Section 4.7.1.3 of the DEIS (page 4-111) should be revised accordingly to reflect this new anticipated date.

### ***Air Emissions.***

Algonquin has determined that certain proposed changes to the Stony Point, Chaplin and Burrillville compressor stations are no longer necessary and, as a result, is proposing scope changes to Table 2.1.2-1 as reflected in Attachment D. Given that all of the changes to these compressor stations will reduce the scope of the proposed facilities and the related impacts, these changes are not significant and do not affect the analysis or conclusions of the DEIS.

Algonquin also is proposing changes to Tables 4.11.1-7 through 4.11.1-11 to reflect updated air emissions information included in permit amendments filed with the relevant state agencies.<sup>3</sup> The proposed changes to the tables, reflected in Attachment J, are the result of the scope changes to the three compressor stations discussed above, as well as due to minor adjustments to the relevant calculations. All of these changes to the air emissions tables are *de minimis*, except for the amount of CO<sub>2</sub>e shown in the Proposed Modified Station PTE line for the Southeast Compressor Station in Table 4.11.1-8 and related amounts of greenhouse gas (“GHG”) emissions in the first full paragraph on page 4-236. The CO<sub>2</sub>e and greenhouse gas emissions reported in the DEIS differ from the emissions provided by Algonquin in a June 20, 2014 filing.<sup>4</sup> This proposed change to correct the potential CO<sub>2</sub>e for Southeast in Table 4.11.1-8 and to update the total GHG emissions, as measured in CO<sub>2</sub>e, for all modified compressor stations does not reflect

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<sup>1</sup> References to the Yorktown yard are included in Table 2.2.3-1 (p 2-15), Section 4.2.1.3 (p. 4-19), Section 4.3.2.1 (p. 4-39), Section 4.4.1 (p. 4-56), Section 4.5.1.3 (p. 4-72), Section 4.5.4.3 (p. 4-81), Section 4.6.1.4 (p. 4-88), and Section 4.8.5.1 (p. 4-157). In addition, certain tables will need to be revised to remove the acreage associated with the yard.

<sup>2</sup> Bulletin: U.S. Fish and Wildlife Service Reopens Comment Period on Proposal to List the Northern Long-eared Bat as an Endangered Species (June 30, 2014), available at <http://www.fws.gov/midwest/news/734.html>. On June 30, 2014, FWS announced a 6-month extension of the final determination of whether to list the northern long-eared bat as endangered and reopened the comment period on the proposed rule to list the species due to substantial disagreement regarding the sufficiency or accuracy of the available data relevant to FWS’s determination regarding the proposed listing. 6-Month Extension of Final Determination on the Proposed Endangered Status for the Northern Long-Eared Bat, 79 Fed. Reg. 36,698 (June 30, 2014). FWS will publish a listing determination on or before April 2, 2015. *Id.*

<sup>3</sup> A copy of each permit amendment is included in Attachment E.

<sup>4</sup> Algonquin Gas Transmission, LLC, Supplemental Information – Air Quality Information, Docket No. CP14-96-000 (June 20, 2014) (“Supplemental Filing”).

a significant change in terms of regional GHG emissions.<sup>5</sup> The emissions information provided in the attached table for Southeast is consistent with the information that Algonquin has provided to the New York State Department of Environmental Conservation (“NYSDEC”) and which will be reflected in the modified air permit that NYSDEC will subject to public review.

### *Cumulative Impacts.*

The purpose of the AIM Project is to provide 10 New England shippers with 342,000 dekatherms per day (“Dth/d”) of additional natural gas supply to meet immediate and future load growth demands and to reduce volatility in natural gas pricing. The AIM Project is designed to enable Algonquin to provide 342,000 Dth/d of firm transportation service from Algonquin’s existing receipt point in Ramapo, New York, to various Algonquin city gate delivery points in southern New England, including Connecticut, Rhode Island and Massachusetts. The AIM Project shippers include eight local distribution companies and two municipal utilities that need the transportation capacity to provide natural gas distribution service to end users in Southern New England. State regulatory proceedings or municipal meetings for each of the AIM Project shippers addressed the need for the AIM Project to provide access to supply in order to meet market demand in Southern New England beginning in November 2016. Subject to regulatory approval, construction of the AIM Project is anticipated to occur in 2015 and 2016.

Notwithstanding the AIM Project, as the DEIS explains on page 4-272, Algonquin continues to evaluate various options to modify other parts of its existing interstate natural gas pipeline system to meet the growing market demand for increased energy in the Northeast. One such option is referred to as the Atlantic Bridge Project, which may include work in New York, Connecticut, Rhode Island, and Massachusetts in 2017. As the DEIS also notes, the “specific details about the Atlantic Bridge Project are currently not developed and no applications have been filed.” As a result, there is no “proposal” for action pending before FERC relating to the Atlantic Bridge Project. *See* 40 C.F.R. § 1508.23.

Even if the Atlantic Bridge Project develops at some future date to the point of being a “proposal” for purposes of NEPA, the AIM Project is an unconnected single action that has independent utility. *See* 40 C.F.R. § 1508.25. The AIM Project will proceed irrespective of whether Atlantic Bridge (or any other future “proposals” relating to system modifications or expansions) occurs. The AIM Project does not depend on any other actions for its justification nor automatically cause other actions to occur. Therefore, the proper scope of the EIS for the AIM Project is limited to that action, and the AIM Project is not connected to the Atlantic Bridge Project or any other system modifications.

The potential Atlantic Bridge Project is based on interest for additional natural gas supplies in New England (including New Hampshire and Maine) and the Canadian Maritime provinces. Increased demand for more natural gas supplies in the Northeast continues, due to price volatility in the cold winter months as well as state and local initiatives to convert combustion sources from coal and oil to cleaner-burning natural gas. These supplies would be

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<sup>5</sup> The changes to these amounts reflect the amounts included in the Supplemental Filing with *de minimis* adjustments to reflect the updated amounts in the permit amendments.

outside of the 342,000 Dth/d contracted for under the AIM Project. Algonquin and its affiliate, Maritimes & Northeast Pipeline, L.L.C. (“Maritimes”), conducted a formal open season to determine market demand for additional natural gas supply that could involve additional expansions of the existing Algonquin and Maritimes systems. The open season for the Atlantic Bridge Project, which was completed in March 2014, reflected interest for additional natural gas supplies by local distribution companies, power generators and industrial customers across southern New England, northern New England and Atlantic Canada. Algonquin expects that Atlantic Bridge Project customers will include some southern New England customers, but will also include northern New England and Canadian customers delivering volumes to Maritimes at the end of the Algonquin system in Beverly, Massachusetts. Those customers are also seeking transportation service on Maritimes’ system to transport natural gas to their delivery points off Maritimes’ system or to the point of interconnection between Maritimes and Maritimes & Northeast Pipeline Limited Partnership at the Canadian border for deliveries in Canada.

As a result, Algonquin began to study the feasibility of increasing the delivery of gas supplies to these areas. Initial feasibility review involved conducting surveys along the existing pipeline right-of-way and meeting with landowners and municipal officials so that Algonquin could begin to define the scope of any such new project. At this time, Algonquin has not entered into any precedent agreements for additional natural gas transportation services with any shipper. Nonetheless, Algonquin has begun to present the possibility of a future Atlantic Bridge Project to landowners in informational sessions across New York and the New England states. Algonquin anticipates that, if such potential project does move forward and subject to regulatory approval, it will construct the Atlantic Bridge Project during 2017 and place the facilities into service in November 2017.

Notwithstanding the current lack of any “proposal” for NEPA purposes relating to a future Atlantic Bridge Project, more is known now about the Atlantic Bridge Project and its reasonably foreseeable impacts should the project move forward than was the case at the time of the issuance of the DEIS. As a result, Algonquin provides below, based on the current preliminary plans, a map-level analysis of the current reasonably foreseeable impacts of an Atlantic Bridge Project that may contribute to cumulative impacts to the same affected environments as those of the AIM Project. Algonquin notes, however, that the Atlantic Bridge Project is still preliminary and changes to the routing and design may occur.

## **Cumulative Impacts**

Cumulative impacts may result when the environmental effects associated with a proposed project are added to temporary (construction-related) or permanent (operations-related) impacts associated with other past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project might not be significant, the additive or synergistic effects of multiple projects on the same affected environments could be significant. As noted, Algonquin is in the early planning stages of the Atlantic Bridge Project. Tables 1-1 and 1-2 list the anticipated pipeline facilities being contemplated for expansion under the Atlantic Bridge

Project.<sup>6</sup> Subject to regulatory approvals, construction of the Atlantic Bridge Project is currently anticipated to occur in 2017, which is after the 2015-2016 anticipated AIM Project construction period.

<b>TABLE 1.1. SUMMARY OF CURRENTLY PROPOSED ATLANTIC BRIDGE PROJECT PIPELINE FACILITIES</b>				
<b>State, Facility Name</b>	<b>Description</b>	<b>Proposed Diameter</b>	<b>County</b>	<b>Length (miles)</b>
<b><i>New York</i></b>				<b>8</b>
Mahwah Adder Lift And Relay	Replace existing 26" pipeline	42"	Rockland	1.2
Stony Point Lift And Relay	Replace existing 26" pipeline	42"	Putnam & Westchester	6.8
<b><i>Connecticut</i></b>				<b>29.7</b>
Chaplin System Loop	Add loop pipeline	36"	Windham	3.9
Cromwell System Loop	Extend existing 36" loop pipeline	36"	Hartford, Middlesex, & Tolland	11.9
E-1 System Lift And Relay	Replace existing 6" pipeline	16"	New London	2.2
Oxford Lift And Relay	Replace existing 26" pipeline	42"	New Haven	5.6
P-1 System Loop	Add loop pipeline	12"	Hartford	1.9
Southeast Lift And Relay	Replace existing 26" pipeline	42"	Fairfield	4.2
<b><i>Massachusetts</i></b>				<b>11.3</b>
G-4 System Loop	Add loop pipeline	16"	Bristol	0.2
G-8 System Lift And Relay	Replace existing 8" pipeline	20"	Barnstable	1
Q-1 System Loop	Add loop pipeline	30"	Norfolk	10.1
<b><i>Rhode Island</i></b>				<b>3.5</b>
G-2 System Loop	Add loop pipeline	12"	Newport	2.2
G-4 System Loop	Add loop pipeline	16"	Newport	1.3
<b>Grand Total</b>				<b>52.5</b>

<b>TABLE 1.2. SUMMARY OF CURRENTLY PROPOSED ATLANTIC BRIDGE PROJECT ABOVEGROUND FACILITIES</b>		
<b>State Facility Name</b>	<b>Description</b>	<b>Location (County, Municipality)</b>
<b><i>New York</i></b>		
Southeast Compressor Station	Add compression	Putnam, Southeast

<sup>6</sup> As currently proposed, only three segments of Atlantic Bridge pipeline facilities will overlap or be adjacent to AIM Project pipeline facilities.

**TABLE 1.2. SUMMARY OF CURRENTLY PROPOSED ATLANTIC BRIDGE PROJECT ABOVEGROUND FACILITIES**

<b>State Facility Name</b>	<b>Description</b>	<b>Location (County, Municipality)</b>
Stony Point Compressor Station	Add compression	Rockland, Stony Point
<i>Connecticut</i>		
Chaplin Compressor Station	Add compression and cooling	Windham, Chaplin
Cromwell Compressor Station	Add compression	Middlesex, Cromwell
Oxford Compressor Station	Add compression	New Haven, Oxford
<i>Massachusetts</i>		
Weymouth Compressor Station	New compressor station	Norfolk, Weymouth
<i>Rhode Island</i>		
Burrillville Compressor Station	Add compression	Providence, Burrillville

The following analyzes the potential for cumulative impacts resulting from construction and operation of the Atlantic Bridge Project, based on current preliminary plans, on environmental resources affected by the proposed AIM Project.

#### Geology, Soils, and Sediments

The facilities associated with the Atlantic Bridge Project are expected to have a temporary but direct impact on near-surface geology, soils, and sediments. Clearing and grading associated with construction of the Atlantic Bridge Project and the AIM Project could accelerate the soil erosion process and, without adequate protection, could result in discharge of sediment to adjacent waterbodies and wetlands. Because the direct effects would be localized and limited primarily to the period of construction, cumulative impacts on geology, soils, and sediments would only occur if other projects are constructed at the same time and place as the proposed Atlantic Bridge Project facilities. The construction schedule of the AIM Project does not coincide with the schedule anticipated for the Atlantic Bridge Project. The AIM Project would be constructed and the right-of-way restored before potential construction of the Atlantic Bridge Project. As with the AIM Project, Algonquin would implement the FERC Plan for the Atlantic Bridge Project to establish a baseline for minimizing the potential for erosion as a result of water or wind action and to aid in reestablishing vegetation after construction of each project. In addition, disturbance associated with construction activities would be minimized and mitigated through the application of best management practices (“BMPs”) that would be incorporated in the Atlantic Bridge Project Erosion and Sedimentation Control Plan (“E&SCP”). Should hazardous materials or contaminated soils and/or sediments be encountered during construction, they would be disposed of at fully licensed and permitted disposal facilities in accordance with applicable state and federal laws and regulations. As a result, any cumulative effects on geological resources, soils, and sediments from the AIM Project and Atlantic Bridge Project are expected to be temporary and minor.



### Water Resources and Wetlands

Based on current preliminary plans, construction of the Atlantic Bridge Project facilities could affect 45.9 acres of wetland and cross 77 waterbodies. The Connecticut River is expected to be crossed using the horizontal directional drill (“HDD”) method, which would avoid all direct in-stream effects; however, there is a potential for in-stream impacts should an inadvertent release of drilling mud occur during the crossing. Algonquin would prepare a Best Drilling Practices HDD Plan that describes measures that would be implemented in the event of an inadvertent release of drilling fluid similar to the plan prepared for the Hudson River HDD for the AIM Project.

Sediment loading could also occur due to runoff from construction activities near wetlands and waterbodies. These resources could also be affected by a spill of hazardous liquids or the excavation and dispersal of contaminated sediments during trenching. The AIM Project and Atlantic Bridge Project would be required by the terms and conditions of their respective Section 404 authorizations to provide compensatory mitigation for unavoidable wetland impacts. The AIM Project has also been required to minimize these effects by implementing wetland and waterbody construction and mitigation measures, including erosion control measures that comply with applicable federal and state permit requirements.

Much of the Atlantic Bridge Project is located within the watersheds crossed by the AIM Project, and could potentially result in impacts on wetlands and surface waters. Therefore, there is the potential that cumulative impacts could result if the Atlantic Bridge Project were constructed in addition to the AIM Project; however, the Atlantic Bridge Project would contribute little to the long-term cumulative impacts on wetlands and waterbodies. Impacts on surface waters resulting from project construction would end shortly after the pipelines are installed and most of the impact on wetlands would also be of short duration. It is anticipated that most of the affected wetlands would be restored and most are expected to return to a pre-construction state within a few years. Avoidance and minimization requirements would be followed, however if Atlantic Bridge Project facility construction necessitated any permanent wetland impacts, those impacts are likely to be small in area. Permanent impacts would be minimized to the extent practical and mitigation measures would be implemented as necessary pursuant to applicable regulations. The Atlantic Bridge Project would also be subject to all federal and state regulatory requirements, including wetland and waterbody construction and mitigation measures to minimize impacts to wetlands and water bodies from that project.

Both projects would also occur within the New York City Watershed and would be subject to additional requirements provided for in a stormwater pollution prevention plan (“SWPPP”). The SWPPPs must be approved by the New York City Department of Environmental Protection, and that ensures construction is completed in a manner that protects the watershed and does not result in significant cumulative impacts to the watershed.

Therefore, the cumulative effect on waterbodies and wetlands from the Atlantic Bridge and AIM Project would be temporary and minor.

### Vegetation and Wildlife

When projects are constructed at or near the same time, the combination of construction activities could have a cumulative impact on vegetation and wildlife in the same affected environments. Clearing, grading, and other construction activities associated with the AIM Project and Atlantic Bridge Project would result in the removal of vegetation, alteration of wildlife habitat, displacement of wildlife, and other secondary effects such as forest fragmentation and establishment of invasive plant species.

For each project, Algonquin would implement mitigation measures to minimize the potential for erosion and to minimize the degree and duration of the impact on vegetation and wildlife, which measures would be required in the applicable federal and state permits. These measures include revegetating disturbed areas, increased stabilization of site conditions, and control of the spread of noxious weeds and other invasive species. Because a significant portion of the proposed pipeline facilities for both projects would be within Algonquin's existing pipeline ROWs, public roadways, railways and/or other utility ROWs, impacts on vegetation and wildlife would be minimal. Therefore, while the cumulative effect on vegetation and wildlife from the AIM Project and Atlantic Bridge Project could result in some time delay in the restoration of impacted vegetated areas where construction of the two projects are located in the same affected environment, the overall impact is still temporary and expected to be minor.

### Cultural Resources

Past disturbances to cultural resources are typically related to urban development, accidental disturbances, intentional destruction or vandalism, lack of awareness of historic value, and construction, maintenance, and operations associated with existing infrastructure. Federally regulated projects would include mitigation measures designed to avoid or minimize additional direct impacts on cultural resources. Non-federal actions would need to comply with any identification procedures and mitigation measures required by the states of New York, Connecticut, Rhode Island and Massachusetts for properties listed or eligible for listing on state registers. As has occurred for the AIM Project, the Atlantic Bridge Project would be subject to review under Section 106 of the National Historic Preservation Act, which requires consultation with State Historic Preservation Officers ("SHPOs") and Indian Tribes in order to ensure such project minimizes impacts to historic properties and archaeological resources, including properties listed or eligible for listing on the National Registers of Historic Places. Algonquin has also developed specific plans to address unanticipated discoveries of cultural resources and human remains in the event they are discovered during construction for the AIM Project, and it is expected a similar plan for review by the relevant SHPOs would be prepared for the Atlantic Bridge Project. Accordingly, it is not expected that the AIM Project and Atlantic Bridge Project would result in significant cumulative impacts to cultural resources, particularly since both projects would be constructed generally within existing disturbed ROW.

### Socioeconomics

The Atlantic Bridge Project and the AIM Project would generate temporary construction jobs. The supply of construction workers needed for these projects may be derived from workers

employed near the construction areas. This would provide a direct economic benefit to those individuals and the communities in which they reside. The non-local laborers involved with each project would represent an increase in the percent of the total population in each of the project areas; however, the potentially vacant rental units available in both project areas would offer enough housing for non-local workers. In addition, the Atlantic Bridge Project counties have the necessary infrastructure to provide public services and utilities to support that project.

There would be positive cumulative economic benefits from these two projects. Taxes generated from operation of the projects would result in an annual tax revenue increase. Permanent employment would also increase as a result of the operation and maintenance of these projects, with the cumulative benefit of potentially lowering local unemployment rates over a several-year period.

Construction work would occur generally within existing ROW within the Towns listed in Table 1.1, which represent different economic and ethnic backgrounds. Accordingly, the two projects would not result in a disproportionate impact to environmental justice communities.

### Land Use

The Atlantic Bridge Project and the AIM Project would result in both temporary and permanent changes to current land uses. It is anticipated that 100 percent of the 52.5 miles of Atlantic Bridge Project pipeline facilities would be within or adjacent to existing ROW, consisting primarily of Algonquin pipeline ROW, and including small areas of public roadways, railways, and/or other utility ROWs. Approximately 700 acres of land area could be affected by the Atlantic Bridge Project during construction and operation. Much of this land would be within existing ROW (approximately 390 acres), but the Atlantic Bridge Project could require approximately 110 acres of new permanent ROW. New permanent impacts on land use would be minimal, however, because the majority of the land affected by construction of the Atlantic Bridge Project would be allowed to revert to prior uses following construction. No additional restrictions would be required, except for a small area of land that would be required for the new permanent pipeline easement, operation of aboveground facilities, and permanent access roads. Following construction, the majority of affected areas would be restored and relinquished back to the landowner without restrictions. Some new restrictions would be imposed on the new permanent ROW, but primarily these would be limited to activities such as deep excavations or the construction of new, permanent structures that could threaten the integrity of the pipeline or preclude Algonquin's ability to maintain the pipeline. Because a relatively small area of land used by the Atlantic Bridge Project would be converted to another land use type and because construction would be short term, the cumulative effect on land use from both the AIM Project and Atlantic Bridge Project would be temporary and minor.

### Traffic, Parking, and Transit

There is little potential for cumulative traffic, parking and transit impacts from the Atlantic Bridge Project since it is not scheduled to take place at the same time as the AIM Project. Several factors would minimize the potential for cumulative traffic impacts, including the total distance of the Atlantic Bridge Project and the tendency for construction workers to frequently

share rides and travel to and from work during off-peak hours. Construction would be scheduled for work within roadways and specific crossings so as to avoid commuter traffic and schedules for school buses and local city transit buses to the greatest extent practical. To minimize traffic delays at open-cut road crossings, Algonquin would establish detours before cutting these roads. If no reasonable detours are feasible, at least one traffic lane of the road would be left open, except for brief periods when road closure would be required to lay the pipeline. Appropriate traffic management and signage would be set up and necessary safety measures would be developed in compliance with applicable permits for work in the public roadway. Traffic safety personnel would be on hand during periods of construction. Provisions would be made for detours or otherwise to permit traffic flow. On-street parking may also be temporarily impacted during construction.

Some landowners, however, that are located adjacent or in proximity to work areas that involve pipeline construction, modifications to compressor stations, or modifications to metering stations for the AIM Project and Atlantic Bridge Project would notice construction, along with the temporary traffic and parking impacts described above, over two construction periods (i.e., potentially construction in 2016 and 2017). However, while the cumulative impact of the two projects would thus result in some additional impact related to the duration of the construction period for work on the interstate natural gas pipeline system, construction during each of these construction periods for the two projects is overall relatively short and thus would not result in significant cumulative adverse impacts due to construction traffic and parking. Similarly, some municipalities would notice additional construction vehicles using municipal roads over two construction periods, but the number of construction vehicles is overall small for each project and thus also would not result in significant adverse cumulative impacts.

Given each project's short duration of construction activities, cumulative impacts on traffic, parking and transit would be temporary and minimal.

### Infrastructure and Public Services

The cumulative impact of the Atlantic Bridge Project and the AIM Project on infrastructure and public services would depend on the specific services required for each project. Operation of the Atlantic Bridge Project would not have a major impact on public services since it would not require the construction of new public roads, extensive new sewer or water systems, or result in significant changes in local population levels.

### Air Quality and Noise

Both the AIM Project and Atlantic Bridge Project would have short-term impacts on air quality related to construction activities. Such activities would result in combustion emissions from the operation of construction equipment, commuting construction workers, and equipment delivery vehicles, as well as fugitive dust emissions from soil excavation and other construction activities. However, the AIM Project would be constructed in 2016 and the Atlantic Bridge Project is currently anticipated to be constructed in 2017. Therefore, construction of the two projects would not overlap. As discussed above, some landowners that are located in close proximity to both the AIM Project and Atlantic Bridge Project would notice increased emissions

and fugitive dust and noise during two construction years. As occurred for the AIM Project, Algonquin would be required to examine construction emissions pursuant to Clean Air Act General Conformity regulations for the Atlantic Bridge Project. Moreover, it is expected that FERC would also require the development of a Fugitive Dust Control Plan for the Atlantic Bridge Project as is required for the AIM Project. Moreover, work is expected to occur during the day and not at nighttime hours and construction must be in compliance with FERC noise standards. Thus, it is not expected that landowners and other individuals located near both the AIM Project and Atlantic Bridge Project work areas would be subject to cumulative impacts on air or noise quality from construction activities.

The AIM Project and Atlantic Bridge Project would also result in air quality impacts from ongoing operation of the pipeline and aboveground facilities. However, meaningful quantification of the air quality impacts from the Atlantic Bridge Project cannot be provided at this time because the individual customer requirements have not yet been fully determined, and the resultant Atlantic Bridge Project facilities are as yet not clearly defined. [Note that, as discussed below, both projects are subject to regulation under the CAA and state law.]

Nevertheless, with respect to pipeline and metering and regulating (M&R) station operating emissions, both projects primarily involve modifications to existing facilities, which would likely not result in sufficient amounts of new air emissions that could significantly affect air quality either individually or cumulatively. With respect to compressor station operating emissions, all proposed work for both projects would be subject to ambient air quality analyses, pursuant to applicable federal and state air permitting requirements, as a prerequisite to receiving regulatory approvals. Prior to issuance of air quality approvals, the authorities must make a determination that the cumulative effect of both projects would not cause or contribute to an exceedance of ambient air quality standards, that the appropriate level of control of new air emissions would be installed, and that the compressor stations would be in compliance with all applicable federal and state air quality regulations and permit conditions. All of these factors would minimize the potential ambient air quality impacts from both projects. Further development would ultimately be restricted or disallowed should ambient air quality become threatened.

In addition, both federal and state air quality improvement policies and regulations acknowledge and support the increased use of natural gas as an important step in improvement of air quality on a local and regional basis. To the extent that the new gas supplies are used to displace the use of other, more polluting fossil fuels, the cumulative effect from the AIM and Atlantic Bridge Projects is expected to have a net positive impact on air quality.

### Conclusion

The majority of cumulative impacts that could result from the AIM Project when considered in combination with the Atlantic Bridge Project would be temporary and minor. Cumulative impacts that could occur on wetland and upland vegetation and associated wildlife habitats are expected to be minor given that most of the construction work would occur along existing ROWs for both projects, and over time, impacts to wetland and vegetated areas would mostly be restored to their pre-construction condition except in locations of new permanent easement where wetland functions may change. Some landowners and municipalities could also be affected construction over two different construction periods, but overall construction for each

project is expected to be for a short duration at any one location along the Algonquin system. Some positive cumulative benefits to the community could be realized from increased tax revenues. Short-term cumulative benefits could also be realized through jobs and wages and purchases of goods and materials.



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September 30, 2014

**John Goldrosen**  
jgoldrosen@k-plaw.com

Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington DC 20426

Re: CORRECTED COPY: Town of Dedham Comments on Draft Environmental Impact  
Statement (Algonquin Gas Transmission, LLC)  
Docket No. CP14-96-000

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Dear Ms. Bose:

Enclosed please find a corrected copy of a letter that was sent by mail, and was filed electronically in the above matter, on September 29, 2014. The original copy was missing Page 5. Please disregard the previous letter and replace it with the enclosed. We are filing this copy electronically, as well.

Thank you for your courtesy and understanding in this matter.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'John J. Goldrosen', is written over a light blue circular stamp.

John J. Goldrosen

JJG/eon

Enc.

cc: Acting Town Manager  
507095/DEDH/0001



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September 29, 2014

**John Goldrosen**  
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Ms. Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington DC 20426

Re: Town of Dedham Comments on Draft Environmental Impact Statement  
(Algonquin Gas Transmission, LLC)  
Docket No. CP14-96-000

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Dear Ms. Bose:

The Town of Dedham, Massachusetts ("Town" or "Dedham") hereby submits the following comments on the Draft Environmental Impact Statement ("DEIS") for the Algonquin Incremental Market Project ("Project"). Dedham is particularly and directly affected by the West Roxbury Lateral ("Lateral"), which will be constructed through the Town. The Town Board of Selectmen is submitting a separate letter to state its opposition to the Project. This letter is intended to provide more detailed comments on issues that are either addressed insufficiently in the DEIS, or on which the Town disagrees with conclusions stated in the DEIS.

The Lateral will be constructed along a south to north route through the Town, from an existing Algonquin facility in Westwood to a new metering and regulation station in West Roxbury ("M&R Station"). About 2.9 miles of the Lateral will be located within the Town, nearly all of which will be located within densely developed residential and commercial areas. (DEIS, pp. 2-13, 19). The Lateral will also pass through Gonzalez Field, a Town-owned park that is used for recreational purposes.

As discussed below, the DEIS does not take a sufficiently broad view of the available alternatives to meet the stated objective of the Lateral, which is to provide additional gas supplies to Boston Gas (a division of National Grid). Instead, the DEIS assumes that, to meet that objective, the M&R Station must be built in West Roxbury, and the Lateral must pass through Dedham to reach the M&R Station. Further, even under an assumption that the Lateral is necessary to serve the Project purpose, the DEIS does not adequately evaluate alternative routes through Dedham that would reduce impacts on residential areas and avoid Gonzalez Field. Finally, assuming that the Project were to be constructed in its proposed location through the Town, we offer comments on additional measures that should be considered to reduce or mitigate impacts from the construction and operation of the Project, including construction scheduling, noise, traffic, public roadways and property, and safety.



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I. Alternatives to Routing the Lateral Through Dedham and West Roxbury

The stated objective of the Project, as a whole, is to increase overall natural gas supplies to New England, while the particular objective of the Lateral is to provide increased supplies to Boston Gas. According to the DEIS, the latter objective is to be met by locating the new M&R Station in West Roxbury. Even assuming that Boston Gas has a need for additional supplies, the DEIS fails to explain adequately why the additional connection to the Boston Gas system is to be located in West Roxbury, and the DEIS does not explore alternatives to such a connection.<sup>1</sup> Since there are existing Algonquin gas transmission lines that supply Boston Gas, the DEIS should identify and evaluate options to increase supplies using existing routes and existing M&R stations (such as the Ponkapoag M&R station), by modifying or increasing the capacity of those facilities.

Further, if there are technical reasons why a new M&R station is necessary to provide the requested supplies to Boston Gas, the DEIS does not explain the basis for the selection of a site in West Roxbury, rather than in another location within the large region served by Boston Gas. Finally, even if one were to accept the assumption that the selected location for the M&R Station is the most feasible alternative, the DEIS does not examine alternatives to the Westwood/Dedham/West Roxbury route that could be used to reach the West Roxbury site for the M&R Station, using other principal south-to-north roads (e.g., Routes 138 or 28) or west-to-east roads (e.g., Route 9).

In short, based on the narrow focus of the DEIS, it appears that the selection of the West Roxbury M&R Station location was taken as a “given,” as was the assumption that the new M&R Station was to be supplied through a connection to the existing Westwood facility. If the beginning and endpoints of the Lateral are accepted without examination, the most direct route is, indeed, through Dedham. The Town objects to this predetermination of the Lateral’s route, and requests that the DEIS be revised to expand the geographical scope of the alternatives analysis.

II. Alternatives Within Dedham for the Selected Westwood/Dedham/West Roxbury Route for the Lateral

The DEIS examines two alternatives to the Lateral route that Algonquin has selected, involving modifications of the route at its southern and northern ends. Although the southern

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<sup>1</sup> The DEIS states: “According to Algonquin, Boston Gas has requested a new delivery point in the West Roxbury section of the City of Boston to enhance and reinforce the existing Boston Gas delivery system and support long-term growth in the area.” (DEIS, p. 3-15). This suggests that the location of the West Roxbury M&R Station, and the consequent location of the Lateral, has been determined by Boston Gas, not by the evaluation of alternatives.

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alternative, identified in the DEIS as the “West Roxbury Lateral South End Alternative Route” (“South End Alternative”), would reduce impacts on residential areas within Dedham, the DEIS concludes that the South End Alternative “would not be preferable to or provide an environmental advantage over the proposed route.” (DEIS, p.3-26). The Town disagrees with this conclusion, which gives insufficient weight to the interests of Dedham residents.

The South End Alternative would follow a route along the north side of Interstate 95 and the northbound off-ramp from I-95 to the Boston-Providence Turnpike (“Highway”), and connect with the Highway at about Mile 1.2 of the Lateral.<sup>2</sup> This would replace a portion of the selected Lateral Route that passes through residential and commercial areas on Rustcraft Road and Elm Street, east and southeast of the Highway. As summarized in Table 3.5.3-1 (p. 3-24), the South End Alternative would involve much less construction within a roadway (0.1 compared to 0.6 miles), affect half as many residences within 100 feet of the transmission line (12 versus 24), and involve fewer road crossings (3 versus 5). Nonetheless, the DEIS favors the selected Lateral route, primarily, it appears, for the reason that:

“...installation of the [Lateral] adjacent to Interstate 95 would be inconsistent with MassHighway’s “Policy on the Accommodation of Utilities Longitudinally, Along Controlled-Access Highways,” which precludes the placement of utility infrastructure parallel to the interstate highway system absent extenuating circumstances.”

(DEIS, p. 3-24).<sup>3</sup> Thus, the DEIS allows a general policy of the Massachusetts Highway Department (“MassHighway”) to outweigh the interest of Dedham residents and businesses in avoiding the adverse impacts of the construction and operation of the pipeline. The Town does not concede that MassHighway should have veto power over an alternative route, when municipalities do not have that degree of control over the Project. Further, the DEIS does not indicate whether any formal request has been made to MassHighway to accept the South End Alternative. Perhaps, if asked, MassHighway would determine that the reduction in impacts on local residents and businesses would be “extenuating circumstances” that would justify waiving its policy for this Project.

Evaluating the South End Alternative by the stated criteria for the examination of alternatives in the DEIS (see p. 3-1), the South End Alternative: (i) meets the objectives of the Project as well

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<sup>2</sup> Section 3.5.3, third line, on p. 3-24, states that the direction of the South End Alternative would be from the north side of I-95 “to the east/northeast for about 0.5 mile....” The direction is actually to the west/northwest.

<sup>3</sup> The DEIS does list some other disadvantages of the South End Alternative, but none of those appear to be insurmountable or incapable of mitigation.

**KOPELMAN AND PAIGE, P.C.**

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 September 29, 2014  
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as the selected route; (ii) is “technically and economically feasible and practical”; and (iii) offers “significant environmental advantage” over the selected route. The Town requests that the South End Alternative be fully and objectively evaluated.

### III. Mitigating Impacts of the Selected Route

Assuming that the Lateral is to be built on the proposed route through Dedham, the Town has several comments on the assessment of environmental impacts and potential mitigation measures.

#### A. Traffic

As noted in the DEIS, the Project has the potential for serious disruption of traffic along the selected route, particularly along the Highway and at the intersection of High and East Streets. The DEIS is not as specific as it could be, as to which portions of the Project would be constructed during overnight hours (midnight to 8 AM), as compared with daytime construction. As noted in Table 4.9.5-1 (p. 4-183), traffic volumes are high throughout the daytime hours on weekdays, and on Saturdays as well.

While measures have been implemented to mitigate impacts at the intersections of the Highway and the entrances to Legacy Place, the intersection of High and East Streets has not been adequately addressed. The DEIS acknowledges that there would be “unavoidable significant adverse impacts, particularly at the High Street intersection with East Street and Harris Street.” (P. 4-187). The DEIS states that work at this intersection would be undertaken during “off-peak daytime hours,” and that “it will not be possible to maintain continuous two-way travel during most construction.” (P. 4-186, App. G-49). The Town questions whether this is a realistic approach, given the volume of traffic throughout the day at that intersection. Table 4, at App. G-52, indicates that the Level of Service at High Street would be reduced from B to F during construction, at either morning, midday, or evening hours. This may be a location at which overnight work should be considered, after further consultation with the Town. The decision as to the hours of construction should rest ultimately with the Town, and not with Algonquin.

#### B. Noise

Noise is a particular concern for Town residents along the proposed route. The Town notes that there is a residential area in the Prospect/Willow/Spruce Street neighborhood on the northwest side of the Highway, between the Dedham Plaza and the Eastern Avenue intersection with the Highway. The choice of nighttime construction along this portion of the Highway for purposes of traffic control, must be balanced against the additional impacts on residents caused by construction during sleeping hours. As noted above, closer consideration of the South End

**KOPELMAN AND PAIGE, P.C.**

Ms. Kimberly D. Bose  
 Secretary  
 September 29, 2014  
 Page 5

Alternative might result in eliminating construction impacts on residents of Rustcraft Road and Elm Streets.

C. Repaving of Town Streets

The Town seeks assurances that repaving of Town roadways will be “from curb to curb,” and not limited to the width of actual construction. The DEIS is not specific as to Algonquin’s commitment to this Town policy, stating only that the policy has been “reviewed” and that repaving would be “in accordance with applicable state and municipal requirements.” (P. 2-28, App. G-44). The Town wishes to be sure that its “curb-to-curb” policy will be observed, even if state law might, arguably, require only that pre-existing conditions be restored.

D. Gonzalez Field

The proposed route would cross Gonzalez Field, a Town-owned park and recreation area. Algonquin has discussed with the Town Parks and Recreation Commission whether there are alternative routes across Gonzalez Field that would reduce impacts on playing surfaces. There have also been discussions about timing construction so as to limit construction to the seasons of the year when the Field is not in use by sports teams. The Town wishes to clarify that these discussions have not resulted in any firm commitment by Algonquin or a final agreement. Further, based on the DEIS, the Project route has been altered by a “minor route variation” that would increase impacts on a soccer field, with the “advantage” of avoiding impacts with future expansions of the Harris Street bridge and the Highway by the Massachusetts Department of Transportation. (P. 3-27). As with the evaluation of the South End Alternative (see above), the interests of state agencies are being favored over those of the Town and its residents.

The DEIS requires Algonquin to file a “site-specific construction plan” for Gonzalez Field, prior to the end of the DEIS comment period, including the timing of construction and measures to be implemented to minimize conflicts with the use of the Field. (Pp. 4-163-4, 5-22-3). If such a plan has been or is to be filed, it should be clear that it has not yet been approved by the Parks and Recreation Commission on behalf of the Town. Nonetheless, the Commission is prepared to work cooperatively with Algonquin to develop and implement such a construction plan, if the final route crosses Gonzalez Field.

E. Timing of Construction

The DEIS notes that, to speed construction, two or three crews may be working on the Project in Dedham at a given time. There may be an advantage to the Town in having the Project completed as quickly as possible, to minimize the duration of disruption, but that must be balanced against the potential for an increased degree of disruption (particularly with respect to

**KOPELMAN AND PAIGE, P.C.**

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 Page 6

traffic), if the scheduling of the work is not carefully coordinated. It is difficult to strike this balance, without knowing how quickly work would be completed within a particular section, and in what order. Algonquin should be required to develop a complete construction schedule, and to review it with the Town and state officials both before construction commences and on a continuing basis, to monitor the amount and degree of impacts.

F. Public Safety

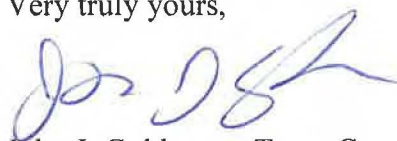
As the DEIS recognizes, the construction and operation of a high-pressure natural gas transmission line raises significant public safety concerns. The route within Dedham, for the most part, passes through heavily populated and developed commercial and residential areas, which are classified as "High Consequence Areas" for purposes of federal natural gas pipeline safety standards. (Pp. 4-255-259). The DEIS discusses procedures for "risk assessment," and for "integrity assessments" based on the level of risk. It is also stated that older pipelines are more likely to present problems from corrosion and material failure. (PP. 4-260-3). This suggests that the Project would be less likely to be inspected post-construction than existing facilities, perhaps for many years, because the Project would be deemed comparatively unlikely to pose a risk of failure. In response to the concerns about public safety, and in recognition of the intense development along the Lateral route, the Town requests that a condition be imposed that an integrity assessment be made within a shorter period of time after construction (e.g., 1-2 years), to ensure against any defects in materials or construction that might become evident within a relatively short time frame.

Conclusion

It is the Town's position that the DEIS does not examine the premises for the construction of the Lateral through Dedham, nor does it adequately assess alternatives to the selected route. The Project should not go forward until the DEIS is revised accordingly, and a further comment period is provided on the revised DEIS.

Nonetheless, if the Project moves forward, the Town requests that additional conditions and mitigation requirements be imposed, and that Algonquin be directed to work closely with Town and state officials to minimize Project impacts.

Very truly yours,



John J. Goldrosen, Town Counsel  
 On behalf of the Town of Dedham

JJG/eon  
 cc: Acting Town Manager  
 506951/DEDH/0001



Document Content(s)

DEDH Algonquin corrected copy DEIS comments.PDF.....1-7

CP14-96

ASSISTANT  
CITY CLERK

## CITY OF BOSTON • MASSACHUSETTS

OFFICE OF THE MAYOR  
MARTIN J. WALSH

September 26, 2014

Ms. Cheryl A. LaFluer, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: Algonquin Gas Transmission, LLC  
FERC Docket No. CP14-96

Dear Commissioner LaFluer:

I am writing in regard to the Algonquin Incremental Market Project proposed by Algonquin Transmission, LLC (Algonquin). As Mayor of the City of Boston, I am deeply concerned about the impact that this proposed project may have on West Roxbury.

At the recent public hearing held in Dedham, Massachusetts, the community raised many issues that merit consideration by your agency. I share the concerns of the community and of other public officials about the impact that the proposed compressor pump station will have on the area. This station would be sited near an active quarry in West Roxbury. The dangers of natural gas are amplified by the proximity to a quarry where blasting occurs. The quarry abuts a densely populated area which in addition to residential neighborhoods includes the Deutsches Altenheim assisted care and nursing facility and Roxbury Latin School.

I recognize that Algonquin has been available to answer questions and discuss concerns, and has worked to mitigate certain impacts of the construction along the route. Of particular note are the changes Algonquin has made to its plan in order to mitigate some concerns surrounding the displacement of Saint Theresa's church and school in West Roxbury. It is of the utmost importance that FERC use this opportunity to ensure that Algonquin continues to thoroughly review all possible routes, and that the final decision provides the greatest degree of environmental protection and public safety.

The City's Office of Neighborhood Services has continued to receive inquiries and hear concerns from residents of West Roxbury. Due to the large number of inquiries and the critical nature of this project, I respectfully request that the comment period set to end September 29, 2014, be extended. An extension of the comment period will allow residents to further inquire about the project and submit informed comments to the official docket.

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617-635-4500 • www.boston.gov

2014-00218

J.A. - 0585

I hope that as we continue to work together to achieve energy independence we can also work to ensure that the concerns of residential neighborhoods are heard and addressed. Please be assured that my Administration is ready to work with you in this regard.

Thank you for your consideration on this important and time sensitive matter. If I may be of further assistance on this matter, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Martin J. Walsh', with a stylized flourish at the end.

Martin J. Walsh  
Mayor  
City of Boston



Document Content(s)

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projects, as both companies have proposed their projects for the same parcel of land at the intersection of 11<sup>th</sup> Street and Broadway, Verplanck.

- Village of Buchanan – resolution opposing Spectra Energy’s Algonquin Gas Transmission Line, urging FERC to protect the rights, health and safety of the residents and deny the application in its entirety.

Copies of these actions are attached for your reference.

Other concerns are based on Spectra’s recently announced plans to expand natural gas pipeline capacity into the New England Market. FERC held a public hearing on the DEIS for the AIM project September 15, 2014, but Spectra’s planned expansion is not included in the DEIS. Therefore, the total and collective impacts of the project were not addressed. Also missing from the DEIS is a Hazards Analysis for Indian Point which is currently being performed by Entergy. The omission of the Hazards Analysis and Spectra’s expansion plans prevented members of the public from making informed comments on the project as a whole at the September 15 hearing.

Nearby residents also have questions about two other major energy projects proposed for their area. Champlain Hudson Power Express (CHPE) has just received approval from the U.S. Department of Energy to provide power to New York City by laying transmission lines through and around the Hudson River. WPP has proposed burying high voltage cables connecting the converter station in Athens, N.Y., with a high voltage converter station in Verplanck, N.Y. Both projects will run close to Indian Point, which has spent fuel rods and is located on the Ramapo fault line.

Based on all these concerns, I urge FERC to withdraw the current DEIS, evaluate and review the potential health and safety impacts of the AIM project in its entirety, and then issue a supplemental DEIS for public comment. While infrastructure and jobs are important considerations, we must take precautions to protect public health and safety and the environment.

Sincerely,

Nita M. Lowey  
Member of Congress



BOARD OF LEGISLATORS  
COUNTY OF WESTCHESTER,  
STATE OF NEW YORK

INTRODUCED BY:

LEGISLATORS PARKER & HARCKHAM

**Resolution No. - 2014**

**To ensure public safety and health  
regarding Spectra Energy's Algonquin Incremental Market (AIM) natural gas pipeline,  
compressor and metering stations expansion project**

WHEREAS, Algonquin Gas Transmission, LLC, a wholly-owned subsidiary of Spectra Energy Partners, submitted Resource Report #9 in Docket # CP14-96-000 which does not reflect aggregate (existing and proposed) and cumulative emissions from compressor stations, metering stations, and pipelines in the entire Algonquin Incremental Market project;

WHEREAS, peer-reviewed scientific studies indicate that emissions from compressor stations and other shale gas infrastructure are associated with negative health impacts;

WHEREAS, peer-reviewed scientific studies and the World Health Organization link exposure between air pollution and neurological, cardiovascular, respiratory and other health impacts;

WHEREAS, the current emissions will be significantly increased by the expansion of the Southeast and Stony Point compressor stations, and other gas pipeline infrastructure and operations (including but not limited to metering and regulating stations, pipelines, valves, fittings and pigging operations) and the tri-state region including Rockland, Westchester, and Putnam counties is already considered a non-attainment zone for air quality standards according to the U.S. Environmental Protection Agency and exceeds the limits for pollutants such as ground level ozone and particulate matter;

WHEREAS, there is presently no advanced notification for all planned compressor station and other gas pipeline infrastructure and operations blowdowns, either full or partial, or immediately following any unplanned partial or full blowdowns in order for residents and public officials to take prompt emergency measures;

WHEREAS, the location of the AIM pipeline within close proximity to the Indian Point Nuclear Facility and 40 years of spent fuel rods, and intersects with two proposed high voltage power lines, and in close proximity to a significant seismic zone, poses a risk of catastrophic damage with profound long-term impacts on the region;

WHEREAS, materials and contaminants in the gas pipeline include Radium precipitate, Radon and its decay products, Lead and Polonium, many of which are known carcinogens;

**WHEREAS, Algonquin Gas Transmission, LLC (AGT) has safely operated pipelines in Westchester County for more than 60 years;**

**WHEREAS, the AIM project will utilize local union labor and provide more than 300 short-term construction related jobs in Westchester County;**

**WHEREAS, the Westchester County Board of Legislators feels duty bound to protect the health and safety of all County residents and of all workers associated with the project;**

**THEREFORE, BE IT RESOLVED that an independent air emissions baseline assessment be conducted in the areas directly impacted by the proposed compressor and metering and regulating stations modifications before permitting, and be monitored by an independent expert acceptable to industry, local government officials, advocates and the public, funded by Spectra Energy, and that continuous emissions monitoring be conducted and results of the continuous monitoring of air, water, land and all other environmental impacts be reported daily to the New York State Department of Environmental Conservation the United States Department of Environmental Protection Agency and made available to the public in a transparent manner, and be it**

**FURTHER RESOLVED, that the best available mitigation technologies and practices be required to be installed on all components of the existing and proposed expansion of Algonquin Pipeline's compressor and metering stations including electric compressor engines, zero emission dehydrators, blowdown prevention, vapor recovery units, and methane capturing equipment and practices outlined by the U.S. Environmental Protection Agency, and if gas-driven engines are used instead of preferred electric engines, that selective catalytic reduction must be installed, and be it**

**FURTHER RESOLVED, effective immediately, advanced notification of all planned blowdowns, either full or partial, and notification within 30 minutes following any unplanned partial or full blowdowns of the Story Point and Southeast compressor stations and other gas pipeline infrastructure and operations (including but not limited to metering and regulating stations, pipelines, valves, fittings, and pigging operations) be given to the County of Westchester in order to alert all residents, police, fire departments and municipalities within Westchester County, and be it**

**FURTHER RESOLVED, that a comprehensive and transparent Health Impact Assessment (HIA), as outlined by the Centers for Disease Control and the National Academy of Sciences, be conducted by an independent entity acceptable to industry, local government officials, advocates and the public, and funded by Spectra Energy, and be it**

**FURTHER RESOLVED, that this comprehensive and transparent Health Impact Assessment (HIA) cover cumulative short-term and long-term as well as direct and indirect impacts of all infrastructure components and operations of the AIM project, including compressor stations emissions and blowdowns, metering and regulating stations emissions, and pipeline leakage prior to construction, during construction, during normal operations and during blowdowns and accidental release events, with a thorough analysis of all materials and contaminants in the pipeline, including Radium precipitate, Radon and its decay products, Lead and Polonium, and with a thorough analysis of the proposed Pipeline Inspection Gauge (PIG) launching staging areas and the handling, storage, cleaning, and disposal of PIGs, PIG wastewater, PIG launcher and all other associated equipment with PIG operations, and be it**

FURTHER RESOLVED, that a comprehensive, independent and transparent risk assessment of the potential catastrophic explosion of a 42" diameter high-pressure pipeline in close proximity to Indian Point Nuclear Facility and a significant seismic zone be conducted, and that assessment should be funded by Spectra Energy, to be completed in accordance with CFR Federal Law 50.59 and 10 CFR 100.20 regarding changes to site, and be it

FURTHER RESOLVED, that the Westchester County Board of Legislators opposes any construction of maintenance facilities located near schools, parks, houses of worship, business or residential districts or any other population centers and any current existing facilities near such locations be moved along the right-of-way, and be it

FURTHER RESOLVED that Spectra Energy comply with New York State Law since it has one of the highest standards of environmental protection by undergoing a full Environmental Impact Statement to comply with the requirements of the New York State Environmental Quality Review Act and minimize and mitigate any negative environmental impacts, and be it

FURTHER RESOLVED, that a copy of this resolution be sent to the Federal Energy Regulatory Commission and all involved Agencies with the request that the health, safety and planning concerns stated in this resolution be addressed and mitigated in the environmental review and all other review processes before project permissions be granted.

July 21, 2014:

Committee on E&E

James Messier

20 B. / 17

Calvin Boy

Calvin Parker

Julius S. Jones

Stella Moratti

Comm. on Infra.

Raymond [Signature]

20 B. / 17

Calvin Boy

Alfreda Williams

Stella Moratti

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Introduced by:

Hon. Harriet D. Cornell, Sponsor  
Hon. Toney L. Earl, Co-Sponsor  
Hon. Nancy Low-Hogan, Co-Sponsor  
Hon. Douglas J. Jobson, Co-Sponsor  
Hon. Ilan S. Schoenberger, Co-Sponsor  
Hon. Philip Soskin, Co-Sponsor  
Hon. Alden H. Wolfe, Co-Sponsor

**AMENDED**

Referral No. 1021

September 16, 2014

**RESOLUTION NO. 404 OF 2014  
URGING THAT HEALTH, SAFETY AND PLANNING CONCERNS BE  
ADDRESSED AND MITIGATED IN THE ENVIRONMENTAL REVIEW AND ALL  
OTHER REVIEW PROCESSES BEFORE PROJECT PERMISSIONS BE  
GRANTED FOR SPECTRA ENERGY'S ALGONQUIN INCREMENTAL MARKET  
(AIM) NATURAL GAS PIPELINE, COMPRESSOR AND METERING  
STATIONS EXPANSION PROJECT**

**CORNELL/LOW-HOGAN, SCHOENBERGER, SOSKIN, HOOD, JR., WOLFE:  
UNAN.**

WHEREAS, Algonquin Gas Transmission, LLC, (AGT) a wholly-owned subsidiary of Spectra Energy Partners which is seeking expansion of pipelines to serve customers in Massachusetts, Connecticut and Rhode Island, and affecting Rockland, Westchester and Putnam Counties, submitted Resource Report #9 in Docket # CP14-96-000 which does not reflect aggregate (existing, proposed and cumulative) emissions from compressor stations, metering stations, and pipelines in the entire Algonquin Incremental Market (AIM) project; and

WHEREAS, peer-reviewed scientific studies and the World Health Organization link exposure between air pollution and neurological, cardiovascular, respiratory and other health problems, while peer-reviewed scientific studies specifically indicate that emissions from compressor stations and other shale gas infrastructure are also associated with negative health impacts; and

WHEREAS, the current emissions will be significantly increased by the expansion of the Southeast and Stony Point compressor stations and other gas pipeline infrastructure and operations, including but not limited to metering and regulating stations, pipelines, valves, fittings and Pipeline Inspection Gauge (PIG) operations; and

**WHEREAS, the tri-state region - including Rockland, Westchester, and Putnam counties - is already considered a non-attainment zone for air quality standards according to the United States Environmental Protection Agency (EPA) and exceeds the limits for pollutants such as ground level ozone and particulate matter; and**

**WHEREAS, there is presently no advanced notification for all planned full or partial blowdowns at compressor stations, or immediately following any unplanned partial or full blowdowns in order for residents and public officials to take prompt emergency measures; and**

**WHEREAS, the location of the AIM pipeline: 1) is within close proximity to the Indian Point Nuclear Facility and 40 years of spent fuel rods; 2) intersects with two proposed high voltage power lines; and 3) is in close proximity to a significant seismic zone. This poses a risk of catastrophic damage with profound long-term impacts on the region; and**

**WHEREAS, materials and contaminants in the gas pipeline include radium precipitate, radon and its decay products, lead and polonium, many of which are known carcinogens and present a serious health risk both to local residents as well as the potentially hundreds of short-term construction-related workers in Rockland County; and**

**WHEREAS, the Rockland County Legislature feels duty bound to protect the health and safety of all County residents and all workers associated with the project; and**

**WHEREAS, the Environmental Committee has met, considered and by a unanimous vote, approved this resolution; now therefore be it**

**RESOLVED, that**

- 1) before permits are issued, an independent air emissions baseline assessment be conducted in the areas directly impacted by the proposed compressor and metering and regulating stations modifications;**
- 2) the pipeline be continually monitored by an independent expert acceptable to industry, local government officials, advocates and the public, funded by Spectra Energy; and**
- 3) results of the continuous monitoring of air, water, land and all other environmental impacts be reported daily to the New York State Department of Environmental Conservation (DEC) and the EPA, and made available to the public in a transparent manner;**

**and be it further**

**RESOLVED, that AGT be required: 1) to install the best available mitigation technologies on all components of the existing and proposed compressor and metering stations in the AIM pipeline project, including electric compressor engines,**



zero emission dehydrators, blowdown prevention, vapor recovery units, and methane capturing equipment; 2) to utilize the best practices outlined by the EPA; and 3) to install selective catalytic reduction if gas-driven engines are used instead of preferred electric engines; and be it further

**RESOLVED**, effective immediately, that advanced notification of all planned blowdowns (either full or partial) and notification within 30 minutes following any unplanned partial or full blowdowns of the Stony Point and Southeast compressor stations and other gas pipeline infrastructure and operations (including but not limited to metering and regulating stations, pipelines, valves, fittings, and Pipeline Inspection Gauge [PIG] operations) be given to Rockland County in order to alert all residents, emergency first responders, and municipalities within the County, and be it further

**RESOLVED**, that a comprehensive and transparent Health Impact Assessment (HIA), as outlined by the Centers for Disease Control and Prevention and the National Academy of Sciences, be conducted by an independent entity acceptable to industry, local government officials, advocates and the public, and funded by Spectra Energy, and be it further

**RESOLVED**, that this comprehensive and transparent HIA cover cumulative short-term and long-term impacts as well as direct and indirect impacts of all infrastructure components and operations of the AIM project, including compressor stations emissions and blowdowns, metering and regulating stations emissions, and pipeline leakage prior to construction, during construction, during normal operations and during blowdowns and accidental release events, with a thorough analysis of all materials and contaminants in the pipeline, including radium precipitate, radon and its decay products, lead and polonium, and with a thorough analysis of the proposed Pipeline Inspection Gauge (PIG) launching staging areas and the handling, storage, cleaning, and disposal of PIGs, PIG wastewater, PIG launcher and all other associated equipment with PIG operations, and be it further

**RESOLVED**, that Spectra Energy fund a comprehensive, independent and transparent risk assessment of the potentially catastrophic explosion of a 42" diameter high-pressure pipeline in close proximity to Indian Point Nuclear Facility and a significant seismic zone, to be completed in accordance with CFR Federal Law 50.59 and 10 CFR 100.20 regarding changes to site, and be it further

**RESOLVED**, that the Rockland County Legislature opposes the construction of maintenance facilities near schools, parks, houses of worship, business or residential districts or any other population centers, and be it further

**RESOLVED**, since New York has one of the highest standards of environmental protection, the Rockland County Legislature urges Spectra Energy to follow New York State law by undergoing a full Environmental Impact Statement to comply with the requirements of the State Environmental Quality Review Act (SEQRA) and thereafter minimize and mitigate any negative environmental impacts, and be it further

**RESOLVED**, that the Clerk to the Legislature be and is hereby authorized and directed to send a copy of this resolution to the Federal Energy Regulatory Commission and all federal and state involved agencies with the request that the health, safety and planning concerns stated in this resolution be addressed and mitigated in the environmental review and all other review processes before project permissions be granted; and to send a copy of this resolution to Hon. Barack H. Obama, President of the United States; Hon. Charles Schumer and Hon. Kirsten Gillibrand, United States Senators; Hon. Nita M. Lowey, Member of the United States Congress; the President Pro Tem of the United States Senate; the Speaker of the United States House of Representatives; the Majority and Minority Leaders of the United States Senate and House of Representatives, Hon. Andrew M. Cuomo, Governor of the State of New York; Hon. David Carlucci, Hon. William J. Larkin, Jr., New York State Senators, Hon. Kenneth P. Zebrowski, Jr., Hon. Ellen C. Jaffee, and Hon. James G. Skoufis, Members of the New York State Assembly; the President Pro Tem of the New York State Senate; the Speaker of the New York State Assembly; the Majority and Minority Leaders of the New York State Senate and Assembly and to such other persons as the Clerk, in his discretion, may deem proper in order to effectuate the purpose of this resolution.

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**CITY OF PEEKSKILL COMMON COUNCIL  
PEEKSKILL, NEW YORK**

**AGENDA BILL**

<b>SUBJECT:</b> RESOLUTION TO ENSURE PUBLIC SAFETY AND HEALTH REGARDING SPECTRA ENERGY'S GAS PIPELINE EXPANSION PROJECT.	<b>FOR AGENDA OF: 8/11/14</b>		<b>AGENDA #</b>
	<b>DEPT. OF ORIGIN:</b>	PLANNING	
	<b>DATE SUBMITTED:</b>	8/6/14	
	<b>DEPARTMENT HEAD:</b>	MICHAEL WELTI, AICP	
	<b>EXHIBITS:</b>		

<b>APPROVED BY COMPTROLLER</b>	
<b>APPROVED AS TO FORM BY CORPORATION COUNSEL</b>	
<b>APPROVED BY CITY MANAGER FOR SUBMISSION</b>	

<b>EXPENDITURE REQUIRED \$</b>		<b>AMOUNT BUDGETED \$</b>		<b>APPROPRIATION REQUIRED \$</b>	
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**SUMMARY STATEMENT**

SPECTRA ENERGY'S PROPOSED EXPANSION PROJECT OF ITS ALGONQUIN INCREMENTAL MARKET (AIM) NATURAL GAS PIPELINE WOULD REPLACE AN EXISTING PIPELINE AND RELATED INFRASTRUCTURE, INCLUDING COMPRESSOR AND METERING STATIONS, ON LANDS IN AND AROUND THE CITY OF PEEKSKILL. THIS RESOLUTION SEEKS TO ENSURE THAT SPECTRA ENERGY, ITS SUBSIDIARIES, AND PERMITTING AGENCIES ENGAGE IN A COMPREHENSIVE AND TRANSPARENT REVIEW OF THE PROPOSED PROJECT AND ITS EFFECT ON, AMONG OTHER THINGS, HEALTH, SAFETY AND THE ENVIRONMENT.

**RECOMMENDED ACTION**

STAFF RECOMMENDS ADOPTING THE RESOLUTION.

<b>MOVED BY:</b>	<b>SECONDED BY:</b>
------------------	---------------------

<b>ROLL CALL VOTE</b>			
<b>MAYOR CATALINA</b>		<b>COUNCILWOMAN MCKENZIE</b>	
<b>DEPUTY MAYOR CLAXTON</b>		<b>COUNCILMAN TORRES</b>	
<b>COUNCILWOMAN TALBOT</b>		<b>COUNCILMAN VESCE</b>	
<b>COUNCILMAN RIGGER</b>			

I:\RESO\2014 RESOLUTIONS\8112014\RESO REGARDING SPECTRA ENERGY'S AIM PIPELINE (2).DOC

**RESOLUTION TO ENSURE PUBLIC SAFETY AND HEALTH REGARDING SPECTRA  
ENERGY'S ALGONQUIN INCREMENTAL MARKET (AIM) NATURAL GAS PIPELINE,  
COMPRESSOR AND METERING STATIONS EXPANSION PROJECT**

WHEREAS, Spectra Energy's proposed Algonquin Incremental Market (AIM) Natural Gas Pipeline would replace an existing gas pipeline and related infrastructure on public and private lands at the southern edge of the City of Peekskill with a larger, 42-inch diameter high-pressure pipeline in generally the same location; and

WHEREAS, the Common Council of the City of Peekskill has an interest in ensuring the health and safety of the people who live and work in this area and elsewhere in the community and surrounding region; and

WHEREAS, Algonquin Gas Transmission, L.L.C., a wholly-owned subsidiary of Spectra Energy Partners, submitted Resource Report #9 in Docket # CP14-96-000 which does not reflect aggregate (existing and proposed) and cumulative emissions from compressor stations, metering stations, and pipelines in the entire Algonquin Incremental Market project; and

WHEREAS, peer-reviewed scientific studies indicate that emissions from compressor stations and other shale gas infrastructure are associated with negative health impacts; and

WHEREAS, peer-reviewed scientific studies and the World Health Organization link exposure between air pollution and neurological, cardiovascular, respiratory and other health impacts; and

WHEREAS, the current emissions will be significantly increased by the expansion of the Southeast and Stony Point compressor stations, and other gas pipeline infrastructure and operations (including but not limited to metering and regulating stations, pipelines, valves, fittings and pigging operations) and the tri-state region including Rockland, Westchester, and Putnam counties is already considered a non-attainment zone for air quality standards according to the U.S. Environmental Protection Agency and exceeds the limits for pollutants such as ground level ozone and particulate matter; and

WHEREAS, there is presently no advanced notification for all planned compressor station and other gas pipeline infrastructure and operations blowdowns, either full or partial, or immediately following any unplanned partial or full blowdowns in order for residents and public officials to take prompt emergency measures; and

WHEREAS, the location of the AIM pipeline within close proximity to the Indian Point Nuclear Facility and 40 years of spent fuel rods, intersecting with two proposed high voltage power lines, and in close proximity to a significant seismic zone, poses a risk of catastrophic damage with profound long-term impacts on the region; and

WHEREAS, materials and contaminants in the gas pipeline include Radium precipitate, Radon and its decay products, Lead and Polonium, many of which are known carcinogens; and

WHEREAS, Algonquin Gas Transmission, LLC (AGT) has safely operated pipelines in Peekskill and Westchester County for more than 60 years; and

WHEREAS, the AIM project will utilize local union labor and provide more than 300 short-term construction related jobs in Westchester County; and

WHEREAS, the Common Council of the City of Peekskill is concerned about potential adverse environmental impacts during construction and subsequent operation of this pipeline, including but not limited to impacts to wetlands and to water quality in the Dickie Brook (a bordering stream), impacts to the Blue Mountain Reservation, impacts to health, safety, and property values in adjoining neighborhoods, impacts to city infrastructure (roads, bridges, culverts, utilities, etc.), and impacts to local and county emergency services; and

WHEREAS, such potential adverse environmental impacts would typically be evaluated through an Environmental Impact Statement (EIS) according to the State Environmental Quality Review (SEQR) Act and appropriate alternatives and mitigation strategies examined.

NOW, THEREFORE, BE IT RESOLVED that an independent air emissions baseline assessment be conducted in the areas directly impacted by the proposed compressor and metering and regulating

station modifications before permitting, and be monitored by an independent expert acceptable to industry, local government officials, advocates and the public, funded by Spectra Energy, and that continuous emissions monitoring be conducted and results of the continuous monitoring of air, water, land and all other environmental impacts be reported daily to the New York State Department of Environmental Conservation the United States Department of Environmental Protection Agency and made available to the public in a transparent manner; and be it

FURTHER RESOLVED, that the best available mitigation technologies and practices be required to be installed on all components of the existing and proposed expansion of Algonquin Pipeline's compressor and metering stations including electric compressor engines, zero emission dehydrators, blowdown prevention, vapor recovery units, and methane capturing equipment and practices outlined by the U.S. Environmental Protection Agency, and if gas-driven engines are used instead of preferred electric engines, that selective catalytic reduction must be installed; and be it

FURTHER RESOLVED, effective immediately, advanced notification of all planned blowdowns, either full or partial, and notification within 30 minutes following any unplanned partial or full blowdowns of the Stony Point and Southeast compressor stations and other gas pipeline infrastructure and operations (including but not limited to metering and regulating stations, pipelines, valves, fittings, and pigging operations) be given to the City of Peekskill and also to the County of Westchester in order to alert all residents, police, fire departments and municipalities within Westchester County; and be it

FURTHER RESOLVED, that a comprehensive and transparent Health Impact Assessment (HIA), as outlined by the Centers for Disease Control and the National Academy of Sciences, be conducted by an independent entity acceptable to industry, local government officials, advocates and the public, and funded by Spectra Energy; and be it

FURTHER RESOLVED, that this comprehensive and transparent Health Impact Assessment (HIA) cover cumulative short-term and long-term as well as direct and indirect impacts of all infrastructure components and operations of the AIM project, including compressor stations emissions and blowdowns, metering and regulating stations emissions, and pipeline leakage prior to construction, during construction, during normal operations and during blowdowns and accidental release events, with a thorough analysis of all materials and contaminants in the pipeline, including Radium precipitate, Radon and its decay products, Lead and Polonium, and with a thorough analysis of the proposed Pipeline Inspection Gauge (PIG) launching staging areas and the handling, storage, cleaning, and disposal of PIGs, PIG wastewater, PIG launcher and all other associated equipment with PIG operations; and be it

FURTHER RESOLVED, that a comprehensive, independent and transparent risk assessment of the potential catastrophic explosion of a 42" diameter high-pressure pipeline in close proximity to Indian Point Nuclear Facility and a significant seismic zone be conducted, and that assessment should be funded by Spectra Energy, to be completed in accordance with CFR Federal Law 50.59 and 10 CFR 100.20 regarding changes to sitc; and be it

FURTHER RESOLVED, that the Common Council of the City of Peekskill opposes any construction of maintenance facilities located near schools, parks, houses of worship, business or residential districts or any other population centers and any current existing facilities near such locations be moved along the right-of-way; and be it

FURTHER RESOLVED that Spectra Energy comply with New York State Law since it has one of the highest standards of environmental protection by undergoing a full Environmental Impact Statement to comply with the requirements of the New York State Environmental Quality Review Act and minimize and mitigate any negative environmental impacts; and be it

FURTHER RESOLVED, that a copy of this resolution be sent to the Federal Energy Regulatory Commission and all involved Agencies with the request that the health, safety and planning concerns stated in this resolution be addressed and mitigated in the environmental review and all other review processes before project permissions are granted; and be it

FURTHER RESOLVED, that this Resolution take effect immediately.

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC

Docket No. CP14-96-000

**MOTION TO INTERVENE OF THE TOWN OF CORTLANDT**

Pursuant to Section 15 of the Natural Gas Act, 15 U.S.C. § 717N, and Rule 214 of the Rules and Regulations of the Federal Energy Regulatory Commission ("FERC"), 18 C.F.R. § 385.214(b), the Town of Cortlandt ("Cortlandt" or "the Town"), moves to intervene and requests that FERC grant the Town full party status in the above-captioned proceeding on Algonquin Gas Transmission, LLC's ("Algonquin's") Abbreviated Application for a Certificate of Public Convenience and Necessity and Related Authorizations under Sections 7(b) and 7(c) of the Natural Gas Act (the "Application") for the proposed Algonquin Incremental Market Project ("AIM Project"). In support of its motion, Cortlandt asserts the following:

1. Correspondence or communications with respect to this proceeding should be addressed as follows:

Daniel Riesel  
Sive, Paget & Riesel, P.C.  
460 Park Avenue, 10th Floor  
New York, NY 10022  
646-378-7224  
212-421-1891 (fax)  
driesel@sprlaw.com

Tom Wood  
Cortlandt Town Attorney  
2131 Albany Post Road  
Montrose, NY 10548  
914-736-0930  
914-736-9082 (fax)  
tfwesq@aol.com

Daniel Mach  
Sive, Paget & Riesel, P.C.  
460 Park Avenue, 10th Floor  
New York, NY 10022  
646-378-7291  
212-421-1891 (fax)  
dmach@sprlaw.com

2. Cortlandt is a township located on the eastern bank of the Hudson River, in the northwestern corner of Westchester County, New York. It includes the incorporated villages of Croton-on-Hudson and Buchanan, as well as the unincorporated hamlets of Montrose, Crugers, and Verplanck. It has a population of approximately 41,500 residents.
3. On February 28, 2014, Algonquin filed the Application for authorization to construct and operate the AIM Project. The AIM Project would include the replacement of an existing 26-inch natural gas pipeline in Cortlandt with a 42-inch pipeline; the installation of pipeline along certain new routes within Cortlandt; the creation of a new pipeline crossing of the Hudson River between Cortlandt and the Town of Stony Point, New York, using horizontal directional drilling techniques; and the installation or modification of metering and regulating facilities in Cortlandt and along the border of Cortlandt and a neighboring municipality, the City of Peekskill. The Application was assigned Docket No. CP14-96-000.
4. On March 18, 2014, FERC issued a Notice of Application for the proceeding, which set a comment date of April 8, 2014, and provided that any entity wishing to become a party to the proceeding should file a motion to intervene on or before the comment date.
5. Cortlandt represents interests that will be directly affected by the outcome of this proceeding, within the meaning of FERC Rule 214, 18 C.F.R. § 385.214(b)(ii). The AIM Project would replace or install approximately 7.3 miles of pipeline within the Town of Cortlandt, including .7 miles within the Hamlet of Verplanck and 1.1 miles within the Village of Buchanan.<sup>1</sup> It also would modify two metering and regulating stations in or adjacent to Cortlandt.<sup>2</sup> The replacement, installation, and modification of those facilities would directly impact Cortlandt's residents, many of whom live adjacent to or in close proximity to segments of

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<sup>1</sup> Algonquin Resource Report 1, at 1-7, Table 1.3-1.

<sup>2</sup> *Id.* at 1-12, Table 1.3-2.

the proposed pipeline route. The impacts of construction and operation of the AIM Project on the Town and its residents may include public safety hazards; traffic and transportation disruptions (with related interruptions of public services); noise generation; air pollution; disruption of wetlands and aquatic ecosystems; and adverse effects on the Town's scenic, historic, and cultural resources.

6. Cortlandt's participation in this proceeding is also in the public interest within the meaning of FERC Rule 214, 18 C.F.R. § 385.214(b)(iii). As the representative of numerous residents who will bear the AIM Project's adverse environmental, social, and economic impacts, Cortlandt requires party status in the proceeding to ensure that those residents' voices are heard. As a party to this proceeding, and on behalf of itself and its residents, the Town will assist FERC in evaluating the environmental impacts of the AIM Project on the communities surrounding it and in assessing the asserted public need for the requested pipeline expansion.

7. The interests that Cortlandt represents cannot be represented adequately by any other party because no other municipal entity represents the residents of the Town's unincorporated areas, because many of those residents lack the resources to represent themselves, and because no other entity shares Cortlandt and its residents' interests in the outcome of the proceeding.

8. As a municipality that has an interest in the outcome of this proceeding based on the impacts the proposed project would have on it and its residents, Cortlandt is entitled to party status under 15 U.S.C. § 717N(e) and 18 C.F.R. § 385.214(b).

9. Granting Cortlandt party status will not result in any disruption of this proceeding or cause any undue burden or prejudice to any other party.


10. The Town therefore seeks to intervene so that it may assist FERC in ensuring that the AIM Project is constructed and operated in a safe manner; that the Application demonstrates that



public convenience and necessity require the AIM Project; and that the AIM Project does not impose undue burdens on the Town, its residents, and the general public.

Respectfully submitted,

SIVE, PAGET & RIESEL, P.C.  
*Attorneys for the Town of Cortlandt*

By:   
Daniel Riesel  
Daniel Mach  
460 Park Avenue, 10th Floor  
New York, NY 10022  
(212) 421-2150

Dated: New York, New York  
April 7, 2014

**CERTIFICATE OF SERVICE**

I hereby certify that I have this day served a copy of the foregoing document upon the participants, to date, in this proceeding in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure.

/s/ Daniel Mach  
Daniel Mach

Sive, Paget & Riesel, P.C.  
460 Park Avenue, 10th Floor  
New York, NY 10022

Dated: New York, New York  
April 7, 2014

**Village of Buchanan  
Mayor & Board of Trustees  
Regular Board Meeting  
June 2, 2014**

**PRESENT:**

Mayor Theresa Knickerbocker

Trustees Richard A. Funchion, Nicolas Zachary, Duane M. Jackson and Cesare Pasquale

Village Administrator Kevin Hay

Village Attorney Stephanie V. Porteus

Village Board Secretary Susan F. Matthews

**1. PLEDGE OF ALLEGIANCE:**

Mayor Knickerbocker opened the meeting at 7:30 PM, welcomed everyone, informed them of the fire regulations and led the Pledge of Allegiance.

**2. APPROVE MINUTES:**

February 18, 2014, Workshop Meeting: A MOTION to adopt these minutes as read was made by Trustee Funchion, seconded by Trustee Jackson with all in favor.

April 2014 Organizational Meeting: Mayor Knickerbocker amended page 8, paragraph 1, to change "center of the Village" to "down Broadway and also come into the Village Of Buchanan." A MOTION to adopt these minutes as amended was made by Trustee Funchion, seconded by Trustee Zachary with all in favor.

**3. COMMENTS FROM THE FLOOR: (agenda items only):**

None

**4. NEW BUSINESS:**

**a) 14-23 RESOLUTION REFERRING REQUEST FOR ZONING AMENDMENT TO PLANNING BOARD (GRIFFIN LANDSCAPING)**

Mayor Knickerbocker read the Resolution (*copy attached*).

Mayor Knickerbocker advised that the Village Board has had many discussions at our meetings about this application. They have gone to see one of the properties that Mr. Balter has done in Peckskill. This Resolution is to now send this to the Planning Board to come back with

Trustee Zachary commented that Trustee Funchion summed it up very well and what he said is very true. You may not hear some of the sounds during the day when there are other sounds around. But in the evening and when it is normally quiet around here, sound does carry. You will hear the converter station which is going to be near our border in Verplanck. Trustee Zachary believes it will affect the property values in our area. It is important to attend the protest rally at Letteri field at 6 PM on June 18. He commented that it is very important that we have a good showing to demonstrate that this is not just a few people protesting it. We do not want to be taken advantage of. He commented that this is the age of "Not in my backyard!" and that we have hosted an important source of power in this community for 50 years. We do not want it to translate into "You can do whatever you want here." You have to put a stop to this.

A MOTION to adopt this Resolution as presented was made by Trustee Funchion, seconded by Trustee Jackson with all in favor.

**c) 14-25 RESOLUTION OPPOSING SPECTRA ENERGY'S ALGONQUIN GAS TRANSMISSION LINE.**

Mayor Knickerbocker read the Resolution (*copy attached*).

Mayor Knickerbocker explained that they are proposing a new 42 inch pipeline beneath the river from Stony Point to Verplanck, through the Village of Buchanan to Yorktown Heights and 8 miles of line between Southeast and Danbury, Connecticut. The Mayor met with the Spectra people last week. They had a long discussion. She told them many times that we are totally against this application. What concerns her most is the close proximity, to within 500 feet of, our school. She told them that is not happening. They showed her the route. The Mayor advised that when we speak next week, she has the map and can show where the pipeline would go. She noted that currently there is an existing gas line on the Entergy property. It comes in through the Entergy property at Bleakley Avenue. That is still going to exist. The proposed 42 inch line would come up in Verplanck, come up Broadway, come across just past the cemetery and shoot over to Bleakley Avenue. They would be coming across Bleakley Avenue. The Mayor noted that we just spent \$550,000 to redo that the road. She has advised Spectra that they would not be digging up that road and if that did happen, they would be repaving that complete road. She advised that at the upcoming meeting, there is a member of the task force who has a big piece of tubing so that you will be able to see how big a 42 inch line is.

Mayor Knickerbocker commented that we are unfortunately fighting two of these things at the same time but that there is strength in numbers. We have to stick together with our neighbors to have this not happen. Her biggest fear is not only that it is going through the Village but that if there is a catastrophic event, we really do not have what we need here to take care of it. They

assured her it is very safe. But the Mayor told them that they cannot say it is 100%. She commented that it is not a positive for the Village and we are fighting this.

Trustee Funchion commented that in both of these instances, they tout that they will use Eminent Domain to take the property and basically ignore the wishes of the community. That is a piece of publicity that has to be out there. These two projects are literally being forced down our necks. He commented why is it that Verplanck and Buchanan are becoming the Grand Central Station for power in the entire metropolitan area. We already have to deal with the nuclear power plants and the gas line underneath the power plant. We do have a fault there. He commented that there is an extremely little chance of something happening from an earthquake but if a gas explosion happens to think of what effect that would have on Indian Point. He noted that they will not use the line that already goes through Indian Point. This new line will be put into effect. The construction of it will be quite cumbersome on the people of Verplanck. As Spectra described it, there are these huge pipes that are pushed into and under the river. Trustee Funchion commented that the construction will be right in our face. He urged everyone to please come out to the meetings. Come to the demonstrations. Talk to your neighbors. Talk to the newspapers, businesses and any elected representatives because we have to battle this to the very end.

Trustee Zachary commented that there is no advantage to the Village. If you look at the risks versus rewards, you can come up with lots of risks but there are no rewards. He commented that there is a small amount of tax revenue for an underground gas pipe but it is like when you do an improvement to your house. It is amortized. It is broken down over 20 or 30 years. So what little tax we get would diminish every year. There is next to no advantage to the Village but there are plenty of risks. The Mayor advised that currently we get \$70,000 per year from Spectra for the lines coming in now.

A MOTION to adopt this Resolution as presented was made by Trustee Funchion, seconded by Trustee Zachary with all in favor.

**d) 14-26 RESOLUTION AUTHORIZING THE EMPLOYMENT OF SUMMER SEASONAL HELP.**

Mayor Knickerbocker read the Resolution (*copy attached*).

A MOTION to adopt this Resolution as presented was made by Trustee Funchion, seconded by Trustee Jackson with all in favor.

**e) 14-27 RESOLUTION AUTHORIZING THE EMPLOYMENT OF RECREATION PERSONNEL**

Document Content(s)

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**ALGONQUIN GAS TRANSMISSION, LLC**  
 5400 Westheimer Court  
 Houston, TX 77056-5310  
 713.627.5400 main

Mailing Address:  
 P.O. Box 1642  
 Houston, TX 77251-1642



October 14, 2014

Ms. Kimberly D. Bose, Secretary  
 Federal Energy Regulatory Commission  
 888 First Street, NE  
 Washington, DC 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
 Response to Comments on the Draft Environmental Impact Statement

Dear Ms. Bose:

On February 28, 2014, Algonquin Gas Transmission, LLC (“Algonquin”) filed with the Federal Energy Regulatory Commission (“Commission” or “FERC”) an Abbreviated Application for Certificate of Public Convenience and Necessity and for Related Authorizations for the Algonquin Incremental Market Project (“Project”) in the above-referenced docket. On August 6, 2014, the Commission Staff issued its Draft Environmental Impact Statement (“DEIS”) for the Project. The Commission requested comments on or before September 29, 2014. Algonquin filed responses to the DEIS, including FERC Staff’s recommended mitigation identified in Section 5 of the DEIS (“Staff Mitigation Recommendations”) on September 2, September 19, and September 29, 2014.<sup>1</sup>

Algonquin is responding to certain comments on the DEIS filed with the Commission by the September 29 deadline, as identified more fully in the narrative below and attachments provided herewith.<sup>2</sup>

## **I. Supplemental EIS**

Commenters have noted that the DEIS recommends that plans, technical reports, or other additional information be submitted to FERC prior to the end of the DEIS comment period or prior to commencement of construction, which time-frame the commenters claim “could result in the public and reviewing agencies not having the opportunity or adequate time to review and comment.”<sup>3</sup> The DEIS was not required to include this information to be complete, however.

<sup>1</sup> Supplemental Information of Algonquin Gas Transmission, LLC Including a Response to Condition Number 31 of the DEIS, Docket No. CP14-96-000 (submitted Sept. 2, 2014) (“September 2 Supplemental Information”); Supplemental Information of Algonquin Gas Transmission, LLC re Conditions Number 29, 30, & 31 of the DEIS, Docket No. CP14-96-000 (submitted Sept. 19, 2014) (“September 19 Supplemental Information”); Algonquin Gas Transmission, LLC Supplemental Information – Route Variations, Docket No. CP14-96-000 (submitted Sept. 29, 2014) (“September 29 Supplemental Information”).

<sup>2</sup> Algonquin is responding to certain technical comments on the DEIS in Attachment A. To the extent necessary, Algonquin may file a response to address comments filed after September 29, 2014.

<sup>3</sup> Comment of the Environmental Protection Agency on DEIS at 6-7, Docket No. CP14-96-000 (submitted Sept. 29, 2014) (“EPA Comments”). *See also* Comment of Stop the Algonquin Pipeline Expansion at 2-3, Docket No. CP14-96-000 (submitted Sept. 29, 2014) (“SAPE Comments”); Comment of Reynolds Hills, Inc. on DEIS at 3, Docket No. CP14-96-000 (submitted Sept. 29, 2014) (“Reynolds Comments”); Comment of Earthworks Oil & Gas Accountability Project on DEIS at 1-2, Docket No. CP14-96-000 (submitted Sept. 29, 2014) (“Earthworks

Ms. Kimberly D. Bose, Secretary

October 14, 2014

Page 16

the EM&CP until after the NYPSC issues an Article VII Certificate of Environmental Compatibility and Public Need, it is expected that WPP's EM&CP would propose (and the NYPSC would require) appropriate mitigation for potential impacts similar to that described above for the Project.

Many commenters also asked to review the detailed engineering drawings that will be developed as part of the interference studies. However, detailed drawings are not a requirement of NEPA but rather are developed as part of the ongoing design of a project before construction commences. Corpro, on behalf of Algonquin, is currently preparing the interference studies based on WPP's preferred alignment as recently revised in the filing to the NYPSC on September 12, 2014. WPP and Algonquin will continue to consult so that each project will be designed so as not to interfere with the other.

### ***Atlantic Bridge & Access Northeast Projects***

As explained above, because the details of the Atlantic Bridge and Access Northeast projects are developing, site-specific effects from these projects are not reasonably foreseeable. The Commission has included a discussion of the cumulative impacts of the Atlantic Bridge project, which is consistent with NEPA.<sup>75</sup> The Commission considered the Atlantic Bridge project in the DEIS, and determined that the project would not occur at the same time as the Project and that details about the project are largely unknown.<sup>76</sup> It is not the case that the Commission ignored the Atlantic Bridge project. Rather, it determined that the project was not at the time of the DEIS sufficiently certain to require its environmental effects be taken into account with the Project.<sup>77</sup>

Algonquin has begun to study the feasibility of an Atlantic Bridge project, which involved conducting surveys along the existing pipeline right-of-way and meeting with landowners and municipal officials. Because of this early outreach, Algonquin recognizes that many of the commenters expect that the Atlantic Bridge is a proposed project and have asked that the EIS include a cumulative analysis of the two projects.<sup>78</sup> As stated above, there is still no proposed Atlantic Bridge project because no precedent agreement has been executed with any shipper in order that a proposed action can be formally developed and proposed. However, in response to comments made at the DEIS public hearings and at the request of the Commission Staff, Algonquin has provided the Commission with a map-level cumulative analysis of a future Atlantic Bridge project that may contribute cumulative impacts to the same affected environments as those of the Project. This information was filed as part of Algonquin's

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<sup>75</sup> See DEIS at 4-272.

<sup>76</sup> *Id.*

<sup>77</sup> See *Minisink Residents for Env'tl. Pres. and Safety, et al., v. FERC*, 762 F.3d 97, 109 (D.C. Cir. 2014) (holding that the Commission did not "'close its eyes' to the issue of 'future expansion'" after considering a future project and concluding that the future project was sufficiently uncertain and did not consider its environmental effects in connection with the Minisink Project).

<sup>78</sup> See, e.g., Comments of Croton Watershed Clean Water Coalition on DEIS at 4, Docket No. CP14-96-000 (submitted Sept. 3, 2014) ("CWCWC Comments") (noting the cumulative impact of the Atlantic Bridge project on wetlands and water quality in the Croton Watershed).



Ms. Kimberly D. Bose, Secretary  
 October 14, 2014  
 Page 17

comments to the DEIS on September 29, 2014. However, given the preliminary nature of the Atlantic Bridge project, changes to the routing and design discussed in the map-level cumulative analysis are expected should such project actually move forward.

The Access Northeast project referred to by commenters is in preliminary stages of development. This project is being discussed in response to electric utilities in New England requiring additional firm natural gas supplies in year 2018 and beyond. At this time, there has been no open season held for the Access Northeast project and it is very early to attempt to establish the scope of such project. Given that the Access Northeast project is at the early stages of development, potential project effects are not reasonably foreseeable and would be speculative at this time. Thus, NEPA does not support a cumulative impacts analysis of the Access Northeast project.

### ***Natural Gas Production***

As explained above, the Commission need not analyze the indirect effects of natural gas production in the Marcellus and Utica shale regions because there is no “reasonably close causal relationship” between that development and the Project. Moreover, the Commission is not required to consider the cumulative effects of this development because such effects are outside of the geographic area of the Project.

Commenters incorrectly claim that the Commission’s cumulative effects analysis is deficient because its scope is limited to the vicinity of the Project.<sup>79</sup> For example, commenters have argued that the geographic scope of the cumulative effects analysis is too narrow, primarily because it excludes upstream gas development. In particular, commenters suggest that natural gas production could be occurring many miles upstream of the Project, and that because pipeline projects are a “key link in the chain, connecting supply to markets,” upstream development should therefore be considered as a cumulative effect even though it does not occur in the vicinity of the project.<sup>80</sup> But as explained above, cumulative impacts are limited to those occurring in the same affected environments as the proposal subject to NEPA review. Opponents of the Project cannot conflate the tests for indirect and cumulative effects in an effort to expand the scope of the EIS to include every possible effect with some tangential “linkage” to the Project.

The cumulative effects analysis “is a measurement of the effect of the current project along with any other past, present, or likely future actions *in the same geographic area*.”<sup>81</sup> Neither NEPA nor its implementing regulations require an agency to look outside the environment affected by the proposed project when considering cumulative effects. The purpose of a cumulative effects analysis is to determine whether the incremental impact of the proposed project, when added to the effects of other past, present, and reasonably foreseeable future projects, leads to a significant effect. It would not make sense, therefore, to look beyond the

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<sup>79</sup> ADP Comments at 3.

<sup>80</sup> ADP Comments at 16.

<sup>81</sup> *Taxpayers of Mich. Against Casinos v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006) (emphasis added).

ASSOCIATED  
PUBLIC FILE

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[Company address]  
[Phone number] | [Fax number] | [Web Address]

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REGULATORY  
COMMISSION

2014 OCT 15 P 4: 39

OFFICE OF  
EXTERNAL AFFAIRS

TO:	FERC's Office of External Affairs	FROM:	City Councilor Matt O'Malley
FAX:	202-208-2106	PAGES:	2 (including Fax Cover Sheet)
PHONE:		DATE:	10/15/2014
RE:	Spectra Energy Pipeline Meter Station	CC:	

☐ Urgent    ☐ For Review    ☐ Please Comment    ☐ Please Reply    ☐ Please Recycle

Comments:

Please see the enclosed letter referring to the gas meter station proposal by Spectra Energy at the entrance of the West Roxbury Crush Stone (10 Grove Street, West Roxbury, MA 02132).

2014-00228



# BOSTON CITY COUNCIL

[www.cityofboston.gov/citycouncil](http://www.cityofboston.gov/citycouncil)  
[city.council@cityofboston.gov](mailto:city.council@cityofboston.gov)

One City Hall Square ♦ 5<sup>th</sup> Floor ♦ Boston, MA 02201 ♦ Phone: (617) 635-3040 ♦ Fax: (617) 635-4203

Docket #CP14-96-000

October 14, 2014

Members of FERC,

We, the undersigned members of the Boston City Council, write to formally request a Supplemental Draft Environmental Statement regarding the West Roxbury Lateral portions of the Spectra Algonquin Pipeline Expansion (AIM) project, because the current DEIS does not address alternatives for the delivery of additional gas to the West Roxbury area of Boston. Further, the DEIS fails to specifically address the safety and health issues associated with the introduction of a high-pressure gas line into a densely populated residential area or the location of a Metering & Regulating (M&R) Station across the street from an active quarry. We look forward to your decision and thank you for your consideration.

Sincerely,

Matt O'Malley  
Boston City Councilor D-6

Ayanna Pressley  
Boston City Councilor At-Large

Stephen J. Murphy  
Boston City Councilor At-Large

Josh Zakim  
Boston City Councilor D-8

Timothy P. McCarthy  
Boston City Councilor D-5

Michelle Wu  
Boston City Councilor At-Large

Michael Flaherty  
Boston City Councilor At-Large

Frank Baker  
Boston City Councilor D-7

Tito Jackson  
Boston City Councilor D-7

Charles Yancey  
Boston City Councilor D-4

2014-00228

J.A. - 0613

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# **STOP THE ALGONQUIN PIPELINE EXPANSION!**

29 Highland Rd.  
Rye, NY 10580

October 20, 2014

Secretary Kathleen Bose  
Federal Energy Regulatory Commission  
888 First Avenue NE, Room 1A  
Washington, DC 20426

**RE: Algonquin Incremental Market (“AIM”) Project:  
FERC Docket No. CP14-96-000**

Dear Secretary Bose:

Please accept the following supplemental comments on behalf of Intervenor Stop the Algonquin Pipeline Expansion (“SAPE”), on the Draft Environmental Impact Statement (“DEIS”) for the proposed Algonquin Incremental Market (“AIM”) Project (“Project”).

Of particular concern to SAPE members in Westchester County is the Stony Point to Yorktown Take-up and Relay. *See* Section 2.1.1.2. The Stony Point to Yorktown Take-up and Relay involves the construction of about 12.3 miles of 42-inch-diameter mainline pipeline in the Towns of Stony Point and Cortlandt (including the Hamlet of Verplanck and the Village of Buchanan), the City of Peekskill and the Town of Yorktown. The proposed take-up and relay includes two segments of replacement pipeline and one segment of pipeline construction within a new permanent right-of-way.<sup>1</sup> *See* DEIS at Section 2.1.1.2.

Notably, however, the 2.9-mile segment within a new permanent right-of-way (from MP 2.6 to MP 5.5) is not “take-up and relay” as that term is defined in the DEIS,<sup>2</sup> since it does not involve the removal of existing pipeline and replacement with new pipeline in the same ditch. Rather, the 2.9-mile segment should have been designated a loop, since it would be constructed parallel to existing pipeline to increase capacity.<sup>3</sup> Simply inserting a footnote to Table 2.1.1-1, Summary of Pipeline Facilities, stating the total pipeline length for the Stony Point to Yorktown Take-up and Relay includes a 2.9-

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<sup>1</sup> Starting at the Stony Point Compressor Station (MP 0.0) and extending to MP 2.6 in the Town of Stony Point, the Project would replace approximately 2.6 miles of 26-inch pipeline. At MP 2.6, the 42-inch-diameter mainline pipeline would deviate from the existing right-of-way and be constructed within a new permanent right-of-way as part of the Hudson River Crossing (until MP 5.5). Between MPs 5.5 and 12.3, the existing 26-inch-diameter pipeline would be replaced with new 42-inch-diameter pipeline.

<sup>2</sup> The term “take-up and relay” refers to a construction method by which an existing pipeline is removed and replaced with a new pipeline in the same ditch. *See* Section 2.1.1 at fn. 1.

<sup>3</sup> A pipeline “loop” is a segment of pipe constructed parallel to an existing pipeline to increase capacity. *See* Section 2.1.1 at fn. 2.

mile section of new mainline pipeline within a new permanent right-of-way, does little to inform local residents and businesses about the potential impacts associated with the construction of this new pipeline segment. In fact, short of a detailed review of the DEIS, any reference to the Stony Point to Yorktown Take-up and Relay segment brings with it the incorrect inference that the entire 12.3 miles of the 42-inch-diameter mainline pipeline section consists of “take-up and relay” pipeline segments.

Based on the foregoing, SAPE requests that a revised DEIS be prepared with revised tables that analyze the 12.3-mile section from Stony Point to Yorktown in three separate sections:

- A 42-inch-diameter take-up and relay mainline pipeline from MP 0.0 to MP 2.6 in Rockland County, NY;
- A loop of new 42-inch-diameter mainline pipeline from MP 2.6 to MP 5.5 in Westchester County; and
- A 42-inch-diameter take-up and relay mainline pipeline from MP 5.5 in Cortlandt, NY to MP 12.3 in Yorktown, NY in Westchester County.

Respectfully submitted,

Susan A. Van Dolsen

Stop the Algonquin Pipeline Expansion

Document Content(s)

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CP14-96

ASSOCIATED  
PUBLIC TITLE

## CITY OF BOSTON • MASSACHUSETTS

OFFICE OF THE MAYOR  
MARTIN J. WALSH

October 24, 2014

Ms. Cheryl A. LaFleur, Chairman  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Dear Commissioner LaFleur:

I am writing with regard to the Algonquin Incremental Market Project proposed by Algonquin transmission, LLC (Algonquin). As Mayor of the City of Boston, I represent the residents of West Roxbury who are directly impacted by this project.

At a recent community meeting I held in West Roxbury sponsored by the local representatives and attended by United States Congressman Stephen F. Lynch, many issues were brought to our attention that warrant consideration as the process moves forward. Of particular concern is the danger that the proposed route of the high pressure gas pipeline presents to the densely settled residential homes in the area. Of further concern is the decision to locate the Metering and Regulating station in an area of residential homes and adjacent to an active stone quarry that engages in significant ongoing blasting activity.

As proposed, the current route which runs along Grove Street to the M&R Station at Grove and Centre Streets across the quarry is troubling. According to many of the longtime residents of the homes in the area, they regularly experience shaking and rattling with each blast from the quarry, raising legitimate worry that this is not an optimal or safe location for a high pressure gas line. While I understand the need to supply natural gas to this area, I agree with my neighbors and must oppose the current configuration based on the quality of life and public safety concerns generated by the current iteration of this project.

My office has continued to receive inquiries and hear concerns from the affected communities, especially the West Roxbury area surrounding the quarry. Those calls and concerns also include thoughtful alternatives that would allow the project to proceed under a different route and configuration. I recognize that Spectra has submitted an engineering study done by GZA. However, I respectfully request that this study be reevaluated and more thoroughly examined. In the final analysis, the route must be altered to ensure the reasonable protections sought by the residents of West Roxbury and the adjacent towns.

Thank you for your consideration on this important and time sensitive matter. If I may be of further assistance, please do not hesitate to contact me, I will make myself available.

Sincerely,

Honorable Martin J. Walsh  
Mayor, City of Boston

2014-00253



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**ASSOCIATED  
PUBLIC FILE****FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426**

CP14-96

November 6, 2014

**OFFICE OF THE CHAIRMAN**

The Honorable Nita Lowey  
U.S. House of Representatives  
222 Mamaroneck Ave., #312  
White Plains, NY 10605

Dear Congresswoman Lowey:

Thank you for your October 6, 2014, letter regarding concerns expressed by your constituents in Westchester and Rockland Counties, New York, about Algonquin Transmission, LLC's (Algonquin) Algonquin Incremental Market Project (Federal Energy Regulatory Commission's Docket No. CP14-96-000).

We are in receipt of the resolutions you reference by Westchester County, Rockland County, the City of Peekskill, and the Village of Buchanan regarding the project and the Town of Cortlandt's motion to intervene in Commission's proceeding. Your constituents have raised concerns about health and safety impacts of the project, including the potential project impacts on the Indian Point Nuclear Power Plant and cumulative impacts associated with the Algonquin Atlantic Bridge Project, Champlain Hudson Power Express Project, and the West Point Partners Transmission Project.

As you know, the Commission's draft environmental impact statement (EIS) for the project was issued on August 6, 2014, with a 45-day public comment period. The draft EIS comment period closed on September 29, 2014. You request that the Commission consider withdrawing the draft EIS and issue a supplemental draft EIS, addressing your constituents' concerns. The draft EIS discusses and evaluates all of the issues and the cumulative impacts of the projects identified by your constituents, and concludes that the project would result in some adverse impacts, most of which would be reduced to less than significant levels. Section 5 of the draft EIS also recommends a total of 42 specific mitigation measures to further reduce the project impacts.

Currently, Commission staff is preparing the final EIS, which will address all the comments received on the draft EIS, including those of your constituents. The final EIS will also include the findings of the Entergy Nuclear Operations, Inc.'s safety evaluation of the project on the Indian Point Nuclear Power Plant. The final EIS is currently scheduled for issuance on December 19, 2014, and will be noticed in the *Federal Register* and mailed to the environmental mailing list. Once the final EIS is issued, the Commission will consider its findings before making its decision on whether or not to authorize the project.

2014-00222  
J.A. - 0620

-2-

I hope the above information has been helpful. If I can be of any further assistance in this or any other Commission matter, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read 'CA LaFleur', written in a cursive style.

Cheryl A. LaFleur  
Chairman

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## **STOP THE ALGONQUIN PIPELINE EXPANSION!**

29 Highland Rd.  
Rye, NY 10580

*Nov. 3*  
~~October 8~~, 2014

Michael J. McGehee, Director, Division of Pipeline Certificates, Room 6N-13  
Federal Energy Regulatory Commission  
888 First Street NE, Room 6N-13  
Washington, DC 20426

**RE: Algonquin Incremental Market ("AIM") Project:  
FERC Docket No. CP14-96-000**

Dear Mr. McGehee,

Enclosed please find comments, filed on behalf of Intervenor Stop the Algonquin Pipeline Expansion ("SAPE"), on the Draft Environmental Impact Statement ("DEIS") for the proposed Algonquin Incremental Market ("AIM") Project, particularly as it affects the counties of Rockland, Westchester and Putnam in New York State. As set out more fully in the enclosed, SAPE urges the Federal Energy Regulatory Commission to withdraw the DEIS and take no further action on the application until all of the matters set forth in these comments are addressed in a revised DEIS.

A handwritten signature in black ink, appearing to read "Susan Van Dolsen", followed by a horizontal line.

Respectfully,

Stop the Algonquin Pipeline Extension (SAPE)  
Co-Founders: Paula Clair, Suzannah Glidden, Susan McDonnell, Jerry Ravnitzky,  
Marian Rose, Susan Van Dolsen, Ellen Weininger

cc: Chairwoman Cheryl LeFleur, Suite 11A  
Commissioner Philip D. Moeller, Suite 11B  
Commissioner Tony Clark, Suite 11D  
Commissioner Norman Bay, Suite 11E  
David Morenoff, General Counsel, Room 10A-01  
Jacqueline S. Holmes, Associate General Counsel, Room 10P-11  
Jeff C. Wright, Director, Office of Energy Projects, Room 6A-01  
Rich McGuire, Director, Division of Gas Env. and Engineering, Rm. 62-15  
Michael McLaughlin, Director, Office of Energy Market Regulation, Room 8A-01  
Stefanie Schumacher, Division of Pipeline Certificates

Enclosure



# **STOP THE ALGONQUIN PIPELINE EXPANSION!**

29 Highland Rd.  
Rye, NY 10580

October 20, 2014

Secretary Kathleen Bose  
Federal Energy Regulatory Commission  
888 First Avenue NE, Room 1A  
Washington, DC 20426

**RE: Algonquin Incremental Market ("AIM") Project:  
FERC Docket No. CP14-96-000**

Dear Secretary Bose:

Please accept the following supplemental comments on behalf of Intervenor Stop the Algonquin Pipeline Expansion ("SAPE"), on the Draft Environmental Impact Statement ("DEIS") for the proposed Algonquin Incremental Market ("AIM") Project ("Project").

Of particular concern to SAPE members in Westchester County is the Stony Point to Yorktown Take-up and Relay. *See* Section 2.1.1.2. The Stony Point to Yorktown Take-up and Relay involves the construction of about 12.3 miles of 42-inch-diameter mainline pipeline in the Towns of Stony Point and Cortlandt (including the Hamlet of Verplanck and the Village of Buchanan), the City of Peekskill and the Town of Yorktown. The proposed take-up and relay includes two segments of replacement pipeline and one segment of pipeline construction within a new permanent right-of-way.<sup>1</sup> *See* DEIS at Section 2.1.1.2.

Notably, however, the 2.9-mile segment within a new permanent right-of-way (from MP 2.6 to MP 5.5) is not "take-up and relay" as that term is defined in the DEIS, since it does not involve the removal of existing pipeline and replacement with new pipeline in the same ditch.<sup>2</sup> Rather, the 2.9-mile segment should have been designated a loop, since it would be constructed parallel to existing pipeline to increase capacity.<sup>3</sup> Simply inserting a footnote to Table 2.1.1-1, Summary of Pipeline Facilities, stating the total pipeline length for the Stony Point to Yorktown Take-up and Relay includes a 2.9-

<sup>1</sup> Starting at the Stony Point Compressor Station (MP 0.0) and extending to MP 2.6 in the Town of Stony Point, the Project would replace approximately 2.6 miles of 26-inch pipeline. At MP 2.6, the 42-inch-diameter mainline pipeline would deviate from the existing right-of-way and be constructed within a new permanent right-of-way as part of the Hudson River Crossing (until MP 5.5). Between MPs 5.5 and 12.3, the existing 26-inch-diameter pipeline would be replaced with new 42-inch-diameter pipeline.

<sup>2</sup> The term "take-up and relay" refers to a construction method by which an existing pipeline is removed and replaced with a new pipeline in the same ditch. *See* Section 2.1.1 at fn. 1.

<sup>3</sup> A pipeline "loop" is a segment of pipe constructed parallel to an existing pipeline to increase capacity. *See* Section 2.1.1 at fn. 2.

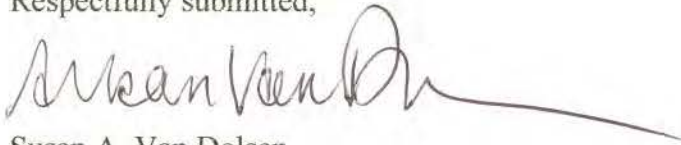


mile section of new mainline pipeline within a new permanent right-of-way, does little to inform local residents and businesses about the potential impacts associated with the construction of this new pipeline segment. In fact, short of a detailed review of the DEIS, any reference to the Stony Point to Yorktown Take-up and Relay segment brings with it the incorrect inference that the entire 12.3 miles of the 42-inch-diameter mainline pipeline section consists of "take-up and relay" pipeline segments.

Based on the foregoing, SAPE requests that a revised DEIS be prepared with revised tables that analyze the 12.3-mile section from Stony Point to Yorktown in three separate sections:

- A 42-inch-diameter take-up and relay mainline pipeline from MP 0.0 to MP 2.6 in Rockland County, NY;
- A loop of new 42-inch-diameter mainline pipeline from MP 2.6 to MP 5.5 in Westchester County; and
- A 42-inch-diameter take-up and relay mainline pipeline from MP 5.5 in Cortlandt, NY to MP 12.3 in Yorktown, NY in Westchester County.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Susan Van Dolsen", with a long horizontal flourish extending to the right.

Susan A. Van Dolsen

Stop the Algonquin Pipeline Expansion

## 2.0 PROJECT DESCRIPTION

### 2.1 PROPOSED FACILITIES

Algonquin proposes to expand its existing natural gas transmission pipeline system in New York, Connecticut, Rhode Island, and Massachusetts. The AIM Project involves construction and operation of about 37.6 miles of replacement, loop, and lateral pipeline facilities; modifications to 6 existing compressor stations; modifications to 24 existing M&R stations; the removal of an existing M&R station; and the construction of 3 new M&R stations as described below. The Project would also involve the abandonment of one segment of existing mainline and four compressor units at one existing compressor station. An overview map of the Project locations and facilities is provided on figure 2.1-1. Detailed maps showing the pipeline routes, aboveground facilities, and pipe and contractor ware yards are contained in appendix B.

#### 2.1.1 Pipeline Facilities

The AIM Project includes about 37.6 miles of pipeline composed of the following facilities:

- replacement of 20.1 miles (in three segments) of existing 26-inch-diameter mainline pipeline with a new 42-inch-diameter pipeline (take-up and relay)<sup>1</sup>;
- extension of existing loop<sup>2</sup> pipeline with about 2.0 miles of additional 36-inch-diameter pipeline within Algonquin's existing pipeline right-of-way (Line-36A Loop Extension);
- replacement of about 9.1 miles of existing 6-inch-diameter pipeline with a new 16-inch-diameter pipeline (E-1 System Lateral Take-up and Relay);
- extension of an existing lateral loop pipeline with about 1.3 miles of additional 12-inch-diameter lateral loop pipeline within Algonquin's existing pipeline right-of-way (E-1 System Lateral Loop); and
- installation of about 5.1 miles of new lateral<sup>3</sup> pipeline off of Algonquin's existing I-4 System Lateral (West Roxbury Lateral).

Table 2.1.1-1 summarizes the proposed pipeline facilities associated with the Project.

<sup>1</sup> Take-up and relay refers to a construction method by which an existing pipeline is removed and replaced with a new pipeline in the same location and depth.

<sup>2</sup> A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity.

<sup>3</sup> A pipeline lateral branches off of a mainline pipeline to connect with or serve a specific customer or group of customers.



TABLE 2.1.1-1

## Summary of Pipeline Facilities for the AIM Project

Facility	County, State *	Existing Diameter (inches)	New/ Replacement Diameter (inches)	Begin Milepost	End Milepost	Length (miles)
<b>Replacement Pipeline</b>						
Havenstraw to Stony Point Take-up and Relay	Rockland, NY	26	42	0.0	3.3	3.3
Stony Point to Yorkdown Take-up and Relay <sup>†</sup>	Rockland, NY	26	42	0.0	3.5	3.5
	Westchester, NY	26	42	3.5	12.3	8.8
Southeast to MLV 19 Take-up and Relay	Putnam, NY	26	42	0.0	0.1	0.1
	Fairfield, CT	26	42	0.1	4.5	4.4
E-1 System Lateral Take-up and Relay	New London, CT	6	16	0.0	9.1	9.1
<b>Loop Extension</b>						
Line-36A Loop Extension	Middlesex, CT	NA	36	0.0	1.8	1.8
	Hartford, CT	NA	36	1.8	2.0	0.2
E-1 System Lateral Loop Extension	New London, CT	NA	12	0.0	1.3	1.3
<b>New Pipeline</b>						
West Roxbury Lateral	Norfolk, MA	NA	16	0.0	3.4	3.4
	Suffolk, MA	NA	16	3.4	4.2	0.8
	Suffolk, MA	NA	24	4.2	5.1	0.9
<b>TOTAL</b>						<b>37.6</b>

\* No pipeline facilities would be located in Rhode Island.

† The total pipeline length for the Stony Point to Yorkdown Take-up and Relay segment includes an approximately 2.9-mile-long section of new mainline pipeline and right-of-way associated with the crossing of the Hudson River.

NA = Not applicable



## **STOP THE ALGONQUIN PIPELINE EXPANSION!**

29 Highland Rd.  
Rye, NY 10580

September 27, 2014

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1  
Washington, DC 20426

**RE: Algonquin Incremental Market ("AIM") Project:  
FERC Docket No. CP14-96-000**

Dear Secretary Bose:

Please accept the following comments on behalf of Intervenors Stop the Algonquin Pipeline Expansion ("SAPE"), on the Draft Environmental Impact Statement ("DEIS") for the proposed Algonquin Incremental Market ("AIM") Project ("Project"), particularly as it affects the counties of Rockland, Westchester and Putnam in New York State. As an Intervenor in these proceedings, SAPE urges the Federal Energy Regulatory Commission ("Commission" or "FERC") to withdraw the DEIS and take no further action on the application until all of the matters set forth in these comments are addressed in a revised DEIS.

For the reasons explained below, the DEIS is inadequate as a National Environmental Policy Act ("NEPA") document and a revised DEIS must be prepared with a new period for review and public comment on the proposed project to ensure that the Commission satisfies its obligations under NEPA.

**I. The Time Period Designated to Submit Comments on the DEIS is Wholly Insufficient, Violates the Public Right to Meaningful Participation, and is Contrary to the Express Purpose of NEPA**

While SAPE appreciates the additional nine (9) days that the Commission has given to the public for comment—extending the original comment period from August 6, 2014 to September 29, 2014—a comment period of just over fifty (50) days is still wholly insufficient time to properly review the DEIS and provide substantive and useful comment given the enormity and complexity of the proposed Project. The Commission should have at least doubled the comment period for a project of this scale. The DEIS



and its exhibits total well over 1,000 pages—including appendices—and discuss complex technical and scientific information, including engineering, ecological and environmental studies and data upon which the Commission relies to justify its conclusions.

To meet the proposed Project's goals, the public should be provided appropriate time to allow for meaningful review of this lengthy DEIS with all its complexity. In that way, the public can adequately assess the study of methodologies, assumptions made and conclusions made before providing the type of meaningful comments to the Commission that NEPA expects. SAPE notes that a coalition of elected officials<sup>1</sup> recently sent a letter to the Commission requesting that the DEIS be withdrawn and a revised DEIS be released when all the missing information is complete, and that a ninety (90) day public comment period commence at that time.

Further, for many who attended the scheduled public meetings over the past week, the meetings represented the only opportunity to have their voices heard on their legitimate concerns regarding the proposed Project. The limited amount of time provided to the public for comment on the DEIS suggests that the Final EIS has already been written and that the Commission is merely going through the motions to create an illusion of meaningful public participation.

## **II. The DEIS is Grossly Incomplete and Premature**

Virtually no aspect of the DEIS is complete; its deficiencies are pervasive and substantial. Taken together they deprive the public of a meaningful opportunity to comment on the proposed plans and fail to impose enforceable mitigation prior to permitting. Significant omissions addressed in the DEIS include, but are not limited to, the following:

- Final conclusion on safety-related conflicts with the Indian Point Energy Center ("IPEC") not provided (Section 4.12.3);
- Field Sampling Plan for potential soil contamination not provided (Section 4.2.2.6);

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<sup>11</sup> To date, the list of politicians that have signed-on to that letter requesting additional time to review and comment on the DEIS includes, but is not limited to: New York State Senator Andrea Stewart-Cousins; New York State Senator George Latimer; Assemblyman Tom Abinanti; Assemblyman David Buchwald; Assemblywoman Sandy Galef; Assemblywoman Shelley Mayer; Assemblyman Steve Otis; Westchester Legislator Catherine Borgia; Westchester Legislator Peter Harckham; Westchester Legislator Michael Kaplowitz; Westchester Legislator Catherine Parker; Westchester Legislator MaryJane Shimsky; Westchester Legislator Lyndon Williams; Putnam Legislator Carl Albano; Putnam Legislator Sam Oliverio; Rockland Legislator Harriet Cornell; Buchanan Mayor Theresa Knickerbocker; Cortlandt Town Supervisor Linda Puglisi; Peekskill Mayor Frank Catalina; Buchanan Town Board Member Duane Jackson; Cortlandt Town Board Member Debbie Costello; Cortlandt Town Board Member Seth Freach; Peekskill City Council Member Drew Claxton; Peekskill City Council Member Kathleen Talbot; Peekskill City Council Member Vinnie Vesce; North Salem Town Board Member Amy Rosmarin; Ossining Town Board Member Victoria Gearity; Yorktown Town Board Member Nick Bianco; Yorktown Town Board Member Visnu Patel.

- Insufficient analysis of impacts to vernal pools in New York (Section 4.4.3.2);
- Non-saturated wetlands not identified (Section 4.4.4);
- Compensatory Mitigation Plan not prepared (Section 4.4.5);
- Tree survey of Harriman State Park not complete (Section 4.6.1.5);
- Alternatives for the Hudson River crossing not prepared (Section 4.4.3);
- Final plans for the Catskill Aqueduct crossing not developed (Section 4.3.2.1);
- Plans for to address trench dewatering not developed (Section 4.3.2.6);
- Survey for the presence of the Indiana bat not complete (Section 4.7.1.2);
- Survey for the presence of the northern long-eared bat not complete (Section 4.7.1.3);
- Incomplete information on impacts to migratory birds (Section 4.7.2);
- Incomplete information on impact to bald eagles (Section 4.7.3);
- Survey for the presence of Timber Rattlesnakes not complete (Section 4.7.5.1);
- NYSDOS approval of consistency assessment for Hudson Crossing (Section 4.8.4.1);
- Design modifications for New York M&R stations not complete (Section 4.11.1.2);
- Site Specific construction plan for St. Patrick Church not provided (Section 4.8.5.1);
- Site Specific construction plan for Buchanan-Verplanck Elementary not provided (Section 4.8.5.1).

These omissions go to the very heart of the question of whether the proposed Project can or should be constructed. By providing a wholly incomplete DEIS for public comment, FERC has put the public and members of SAPE in an uncertain position. Undoubtedly, the permitting of this Project should not be considered further until all of the documents and information identified on the face of the DEIS are completed and made available for review and public comment. Until this occurs, the DEIS is premature and must be withdrawn.



### **III. The Project Poses A Significant Threat to Public Health and Safety.**

The transmission of highly flammable natural gas creates significant risks of loss of life and major property damage. The greatest hazard is a fire or catastrophic explosion following a major pipeline rupture. The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration reports that in the past 20 years alone, on-shore gas transmission incidents have caused 41 fatalities, 195 injuries requiring in-patient hospitalization and over \$1.7 billion in property damage.<sup>2</sup>

Safety is of paramount concern to SAPE members because the proposed Project plans to replace an existing 26-inch diameter pipeline with 42-inch diameter high-pressure pipelines and to add an additional 42-inch diameter high-pressure segment across the Hudson River entering a highly populated, high risk area in Cortlandt, New York in Westchester County. As a result, the Project will allow significantly greater amounts of combustible natural gas to flow through the infrastructure, thereby presenting greater risk of hazard to the public.

FERC's conclusion that the Project will have no significant environmental impacts is unsupportable where virtually no aspect of the DEIS is complete. The public has the right to know with certainty what environmental impacts of the proposed Project will be. This is particularly true where the Project raises significant health and safety concerns that have not been sufficiently addressed in the DEIS.

#### **A. Indian Point Energy Center ("IPEC") ("Indian Point")**

A site that is of particular concern to SAPE members is the Indian Point Energy Center ("IPEC") ("Indian Point") in Buchanan, New York, located in close proximity to the proposed Project route. There are three existing gas pipelines that run under the Hudson River in Algonquin's Right-of-Way and abut the IPEC security barrier. The proposed route of the new 42-inch diameter high-pressure segment would be 0.5 miles south of the existing Right-of-Way, and would cross a portion of IPEC land less than a mile from the IPEC-protected security barrier around the main facility.

Title 10 to the Code of Federal Regulations ("C.F.R.") requires that nuclear power plants be appropriately protected against the dynamic effects and conditions that may occur outside the nuclear power plant. These events include the effects of explosion of hazardous material that may be associated with nearby industrial activities such as transportation routes such as pipelines. Since the Project's proposed route passes within the confines of the IPEC site the requirements of 10 C.F.R. §100.20 should have been considered in the DEIS.

Based almost entirely on data contained in Table 4.12.3-1 ("Existing or Potential Impact Range for the AIM Project"), the DEIS concludes that the proposed Project should not pose any new safety hazards to IPEC. However, this analysis falls short of

<sup>2</sup> Stakeholder Communications, US DEPT OF TRANS PIPELINE AND HAZ SAFETY ADMIN: <http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html?nocache+970#ngtrans>.



adequately addressing the safety-related risk of a major failure of a high-pressure natural gas pipeline in close proximity to IPEC. This failure cannot be ignored where other publicly available evaluations of natural gas pipeline hazards have concluded that a 16-inch diameter natural gas pipeline (at 50 psi) posed an undue risk to a nuclear enrichment center.<sup>3</sup> In light of these potential dangers, the proposed Project's 42-inch diameter pipeline (at 850 psi) plainly poses an unacceptable risk to IPEC.

While we are pleased that FERC has addressed its concern regarding a pipeline explosion near the IPEC facility, its analysis of the safety-related information in connection with the Project's proximity to IPEC is woefully inadequate. Notably, for example, Algonquin is still awaiting receipt of a Hazards Analysis being performed by Entergy. Without an opportunity to review that Hazards Analysis, Algonquin has not made any final conclusions with regard to the safety of its proposed pipeline in the vicinity of IPEC. The absence of final conclusions regarding potential safety-related conflicts with IPEC suggests at the very least that the proposed Project requires additional analysis. The DEIS also fails to fully consider the risk due to seismic activity in the project area and fails to fully analyze the adequacy of Algonquin's emergency response procedures to a major explosion in the vicinity of IPEC.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file its final conclusions regarding any potential safety-related conflicts with IPEC based on the Hazards Analysis currently being performed by Entergy. SAPE respectfully requests that at minimum, Algonquin must be *required* to file its final conclusions regarding those potential safety-related conflicts and that Algonquin must make all further communication regarding potential safety-related conflicts with IPEC available to the public for review and comment.

The absence of any complete information on potential safety-related conflicts with IPEC deprives the public of a meaningful opportunity to comment on the proposed Project. A Supplemental DEIS must be prepared for review and public comment to analyze potential safety-related conflicts with IPEC. *See* Section 4.12.3.

## **B. Existing/Unknown Contaminated Sites**

It is anticipated that the Project will traverse parts of New York State that are in close proximity to existing hazardous sites and facilities. In New York alone, the DEIS identifies three properties where a release of contaminants occurred and had the potential to impact soils along the proposed pipeline route.

Potential contaminants that may be encountered in soils proximate to these facilities include VOCs, petroleum hydrocarbons, polychlorinated biphenyls and other industrial chemicals. Additional soil contamination along the proposed Project route may result from hazardous material or fuel spills during construction and/or those occurring before construction in pre-existing contaminated areas. However, Algonquin has not

<sup>3</sup> *See, e.g.,* The Nuclear Regulatory Commission's 2004 hazard evaluation for the National Enrichment Facility (NEF) (Accession ML0424600718), *available online*.



even completed its inventory of locations where sampling may be necessary and has not provided details to FERC on the protocols for any such additional sampling.

Based on the foregoing, the DEIS *recommends* that prior to construction of the Project, Algonquin file a Field Sampling Plan for potentially contaminated sites that could be encountered during construction, including, but not limited to, the locations of all proposed sampling, the number of samples to be taken and how and where the samples will be analyzed. SAPE respectfully suggests that Algonquin be required to make all further communication regarding the development of its Field Sampling Plan for potentially contaminated sites in New York available to the public for review and comment.

The absence of complete information on potential soil contamination along the proposed Project route deprives the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze the Field Sampling Plan for potentially contaminated sites in New York. *See* Section 4.2.2.6.

#### **IV. The Project Will Affect Numerous Unique Areas And May Cause Destruction of Significant Environmental Resources**

An astounding number of unique resource areas will be adversely affected by the Project, which will cross through several critical environmental areas.

The proposed pipeline will cross the Hudson River, an American Heritage River, as well as Harriman State Park, the Blue Mountain Reservation, the Sylvan Glen Park Preserve, Cheesecote Mountain, the Washington-Rochambeau National Historic Trail and a Village Park in the Village of Buchanan. The proposed pipeline will cross water bodies located within sub-basin level watersheds of the Lower Hudson Watershed in Rockland, Westchester and Putnam Counties. These include crossings at the Minisceongo Creek, Cedar Pond Brook and Dickey Brook, which serve as cold- and warmwater fisheries.

The exceptional value of these unique resource areas cannot be disputed. American Heritage Rivers, including the Hudson River, are so designated because they have characteristics that render them distinctive or unique. The public lands and resources protected at the state level that will be adversely affected by the Project are no less remarkable. For example, the Haverstraw to Stony Point Take-up to Relay segment will affect approximately 15 acres of diverse forested land across a section of the Harriman and Sterling Forests in Rockland County, New York. These areas support a wide variety of flora and fauna.

## A. Wetlands & Vernal Pools

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration to support and under normal circumstances do support, a prevalence of vegetation typically adapted for live in saturated soil conditions. Wetlands are a source of significant biodiversity and serve a variety of functions including flood control, wildlife habitat, recreational opportunities, and improving water quality.

The Project will impact approximately 25 acres of wetlands and 7 vernal pools in New York State. The Project will result in 77 wetland crossings in New York alone. In particular, the Project will impact a large wetland system (B13-RLR-W3) between about MPs 0.8 and 1.0 of the Haverstraw to Stony Point Take-up and Relay segment and the 2 vernal pools in Cortlandt, New York that are located within the temporary construction area for the Project.

Project construction activities can affect wetland resources in many ways. During construction, the primary direct impact of the Project on wetlands in New York would be the short and long-term alteration of wetland vegetation. Other direct impacts associated with the Project could include changes in wetland hydrology and water quality. These disturbances could result in altered biological activities and chemical conditions that could affect the establishment of native vegetation. Secondary impacts could include reduced riparian buffers, disturbance to adjacent habitats and incremental fragmentation. Notwithstanding the identified impacts, the DEIS concludes that the Project would not result in adverse impacts on the functions of the wetlands.

Based on the foregoing, the DEIS *recommends* that prior to construction beginning in the vicinity of the 2 vernal pools in New York, Algonquin file revised site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools as required by state agencies. SAPE respectfully requests that Algonquin be *required* to make all further communication regarding site-specific crossing plans for the two vernal pools in New York available to the public for review and comment.

Algonquin's failure to provide site-specific plans with respect to the crossing of two vernal pools in New York means that the public has had no meaningful opportunity for comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools in New York. *See* Section 4.4.3.2.

### 1. Non-Saturated Wetlands & Construction Right-of-Way Width

Algonquin's Erosion and Soil Control Plan ("E&SCP") stipulates that construction right-of-way width in wetlands be limited to 75 feet and that all additional



temporary work space should be located at least 50 feet from wetlands except where an alternative measures has been requested and approved by FERC.

Not surprisingly, Algonquin identified numerous areas (in Table 4.4.4-1) where it believed that the 75-foot right-of-way was insufficient to accommodate its wetland construction—and that a wider right-of-way was necessary. Without considering the full scope of the environmental impacts on these non-saturated wetlands and without providing data or methodology to support its determination the DEIS simply concludes that Algonquin's modification requests for a wider right-of-way are justified. Further, the DEIS acknowledges that Algonquin's E&SCP was not consistent with FERC Procedures with regard to construction in site-specific non-saturated wetland conditions.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file its final site-specific information regarding the location of those wetlands it believed would meet the criterion of non-saturated conditions at the time of construction. SAPE respectfully requests that Algonquin make all further information regarding the location of those wetlands it believed would meet the criterion of non-saturated conditions at the time of construction available to the public for review and comment.

Algonquin's failure to provide any site-specific information regarding the location of non-saturated wetlands in its E&SCP deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any site-specific information regarding the location of wetlands believed to meet the criterion of non-saturated conditions at the time of construction. *See* Section 4.4.4.

## **2. Compensatory Mitigation Plan**

The majority of the wetland impacts would be on PEM (Palustrine Emergent) and PSS (Palustrine Scrub-Shrub) wetlands, with only 17 acres of PFO (Palustrine Forested) wetland impacts. About 2.5 acres of PFO wetlands would be permanently converted to non-forested conditions as a result of the Project. Algonquin developed a Compensatory Mitigation Plan to provide compensatory mitigation for both temporary impacts and permanent conversion of wetlands to another cover type.

Even though the United States Army Corps of Engineers ("USACE") NY District indicated what it would require in terms of on-site restoration for temporary wetland impacts and off-site mitigation for permanent conversion, Algonquin has not yet developed any final mitigation plan. Further, Algonquin has not even confirmed New York's compensatory mitigation requirements for wetland impacts and has just assumed that the proposal submitted to the USACE NY District would be acceptable to the New York State Department of Environmental Conservation ("NYSDEC"). Notwithstanding these deficiencies, the DEIS concludes that impacts on most wetland resource would be minimal and would be temporary in duration.



Based on the foregoing, the DEIS *recommends* that prior to beginning construction in New York, Algonquin file its final Compensatory Mitigation Plan, developed in consultation with USACE and NYSDEC and file documentation of consultation with these agencies regarding the Compensatory Mitigation Plan. SAPE respectfully suggests that Algonquin must be *required* to make all further communication regarding development of its final Compensatory Mitigation Plan available to the public for review and comment.

Algonquin's failure to finalize a Compensatory Mitigation Plan deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any final Compensatory Mitigation Plan. *See* Section 4.4.5.

### **B. Harriman State Park – Site Specific Plan**

Algonquin's existing right-of-way is currently recognized as existing scrub-shrub and open field wildlife habitats used by a variety of species inhabiting Harriman State Park and Blue Mountain Reservation.

Since Project construction is expected to have impacts on wildlife species that inhabit these habitats, Algonquin met with the Palisades Interstate Park Commission ("PIPC") in January 2014 to discuss the Project's impacts on Harriman State Park. As a result of the meeting, Algonquin agreed to conduct tree counts for the portions of the Project's pipeline construction located in the park to address compensation for tree removal. Algonquin still has not completed *any* tree surveys and continues to consult with the New York State Office of Parks Recreation and Historic Preservation ("NYSOPRHP") and PIPC.

Based on the foregoing, the DEIS *recommends* that, prior to construction of the Haverstraw to Stony Point Take-up and Relay segment, Algonquin file a site-specific plan for the Harriman State Park, including any avoidance or mitigation measures developed with the NYSORPH and PIPC. SAPE respectfully suggests that Algonquin be *required* to make all further communications with NYSORPH and PIPC regarding the site-specific plan for the Harriman State Park available to the public for review and comment.

The absence of any completed tree survey of Harriman State Park deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project as currently envisioned will have on Harriman State Park. *See* Section 4.6.1.5.

### **C. St. Patrick's Church (Verplanck, New York)**

St. Patrick's Church is located in the hamlet of Verplanck, New York. The Stony Point Take-up and Relay segment of the pipeline is expected to cross church property. A



new easement would be required for this crossing as it deviates from the existing right-of-way. Without mitigation, project construction will result in significant adverse impacts to the church property. For example, the project will restrict church parking, interfere with access to the church, and result in noise and dust disturbances. Notably, however, Algonquin has not filed a site-specific construction plan for the church.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file a site-specific construction plan for the St. Patrick Church developed in consultation with church leadership. SAPE respectfully suggests that Algonquin be *required* to file its site-specific plan for the church property and to make all further communications regarding its site-specific construction plan for the St. Patrick's Church available to the public for review the public for review the public for review and comment.

The absence of any site-specific construction plan for the St. Patrick's Church deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on St. Patrick Church. *See* Section 4.8.5.1.

#### **D. Buchanan-Verplanck Elementary School**

The Buchanan-Verplanck Elementary School is a public elementary school serving about 300 people in Westchester County. The Stony Point to Yorktown Take-up and Relay segment of the Project would be located adjacent to the back portion of the school property between MPs 4.9 and 5.0.

The DEIS fails to adequately analyze the potential safety-related impacts of siting a 42-inch diameter high-pressure gas pipeline in close proximity to an elementary school. However, the DEIS acknowledges that, since construction activity could potentially coincide with the school year, construction noise and dust could cause a disturbance to school operations. SAPE suggests that such disturbances are, more likely, a certainty that is unacceptable both in terms of the impact on children's health and their studies.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file a site-specific construction plan for the Buchanan-Verplanck Elementary School developed in consultation with school management. SAPE respectfully suggests that Algonquin be *required* to file its site-specific construction plan and to make all further communications regarding that site-specific construction plan for the Buchanan-Verplanck Elementary School available to the public for review and comment.

The absence of a site-specific construction plan for the Buchanan-Verplanck Elementary School deprived the public and, more to the point, the parents of affected students attending the school, of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on St. Patrick Church. *See* Section 4.8.5.1.



### **E. Hudson River Crossing -- Horizontal Directional Drilling (“HDD”)**

The Hudson River is the only major water body (greater than 100 feet wide) crossed by the pipeline. Algonquin plans to use the Horizontal Directional Drilling (“HDD”) crossing method at the Hudson River in New York.

In accordance with the prescribed (Delft Geotechnics) method, Algonquin completed a hydraulic fracture evaluation for the Hudson River HDD to estimate the maximum effective pressure (*i.e.*, drilling fluid pressure) that can be induced during a HDD operation within a particular soil. The results of the evaluation suggested that there exists a relatively high potential for hydraulic fracture in the soft sediments of the Hudson River HDD alignment. Despite the high risk of hydraulic fracturing using HDD, the DEIS concluded that the HDD method was an appropriate technique for installing the pipeline at the Hudson River crossing.

While the DEIS briefly assesses alternatives to the proposed route, it does so without providing any data to support its conclusion that the proposed route is the most suitable. Notably, Algonquin has not provided the Commission with a contingency plan that incorporates another location or another construction methodology for the Hudson River crossing. If the Project proceeds as planned and the HDD proves unsuccessful, Algonquin will have no alternative location or methodology identified in connection with the proposed Project’s largest water crossing. This is unacceptable.

Algonquin’s failure to develop a contingency plan that incorporates another location or another construction methodology for the HDD crossing of the Hudson River falls short of what is required under NEPA.

Algonquin’s failure to include an alternative location or methodology for the planned Hudson River crossing deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to fully examine any alternative plan considered by Algonquin for the HDD crossing of the Hudson River. *See* Section 4.4.3.

### **F. The Catskill Aqueduct Crossing**

The proposed Stony Point to Yorktown Take-up and Relay segment crosses the Catskill Aqueduct. The Catskill Aqueduct is a part of the New York City water supply system. It brings water from the Catskill Mountains to Yonkers where it connects to other parts of the system.

As currently proposed, Algonquin would remove its existing 26” pipeline that currently crosses over the aqueduct and replace those removed section(s) with 42-inch diameter pipeline. Remarkably, however, Algonquin has still not finalized its planned crossing of the Catskill Aqueduct and is still in consultation with NYCDEP regarding the crossing and evaluating an alternative route that would relocate the segment to the south.



Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file a site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP, containing the location relative to the aqueduct, the construction methods, timing of construction and any mitigation measures to minimize impacts. SAPE respectfully suggests that Algonquin be *required* to file its site-specific crossing plan for the Catskill Aqueduct and to make all further communication regarding the development of a site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP available to the public for review and comment.

Algonquin's failure to finalize its planned crossing of the Catskill Aqueduct deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to fully examine the extent of any impacts of the planned Catskill Aqueduct crossing. *See* Section 4.3.2.1.

### **G. Trench Dewatering**

Project construction activities could negatively affect water resources in many ways. During construction, open trenches may accumulate water, either from seepage or drainage. Where dewatering becomes necessary, the water would be removed and directed into well-vegetated uplands. However, Algonquin's Erosion and Soil Control Plan ("E&SCP") does not address the need to isolate shorter portions of trench to reduce the volume of water handled at one time.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file additional details describing how it would minimize trench dewatering as recommended by the NYSDEC and file documentation of its consultations with NYSDEC. SAPE respectfully suggests that Algonquin be *required* to file a report setting forth such additional details and to make all further communication regarding trench dewatering developed in consultation with the NYCDEC available to the public for review and comment.

Algonquin's failure to fully address trench dewatering and the need to isolate shorter portions of trench to reduce the volume of water handled at one time in its E&SCP deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on trench dewatering. *See* Section 4.3.2.6.

## **V. State of New York Parkland Alienation**

The proposed Project will intrude onto parkland in the State of New York, including the Blue Mountain Reservation, the Sylvan Glen Park Reserve (note: Granite Knolls West is incorrectly considered the same as Sylvan Glen Park Reserve in the DEIS and they are not the same), Cheesecote Mountain and a Village Park in the Village of Buchanan.



New York law is well settled: dedicated park areas in New York are impressed with a public trust for the benefit of the people of the State. That proposition is reflected both in New York case law and in New York statutes. The leading New York decision on this issue is *Williams v. Gallatin*, 229 N.Y. 248 (1920), in which the Court of Appeals held that legislative approval is required when there is a substantial intrusion on parkland for non-park purposes. This requirement, moreover, exists regardless of whether there has been an outright conveyance of title and regardless of whether the parkland is ultimately to be restored. Since *Williams*, New York courts have reaffirmed the principle that parkland is impressed with a public trust, requiring legislative approval before it can be alienated or used for an extended period for non-park purposes.

Notwithstanding the still-binding legal precedent requiring legislative authorization, the Commission takes the opposite position: that the proposed Project would fall within recognized “*de minimis*” exceptions to the rule. Yet the cases cited by the Commission in support of its position are distinguishable from the facts here, in that each of those cases involved land that was found *not* to be parkland.

Respectfully, SAPE believes that the proposed Project as currently envisioned does not fall within any recognized *de minimis* exception and that the proposed Project requires legislative approval for its intrusions onto New York state parkland. In any case, the issue is not one for the parties or the Commission to decide; only a court can properly make such determination in accord with *Williams* and its progeny. See Section 4.8.5.1.

## **VI. The Project Will Have Cumulatively Significant Impacts on the Environment**

NEPA mandates that a proper EIS include a full discussion of the cumulative impacts of a proposed project. See 40 C.F.R. §1508.25(a)(2); *Kleppe v. Sierra Club*, 427 U.S. 390, 413 (1976) (“Cumulative environmental impacts are, indeed, what require a comprehensive impact statement”). An EIS must include the cumulative effects of projects if those projects are “interrelated and functionally interdependent” to the proposed action. *Stewart v. Potts*, 996 F.Supp. 668, 683 (S.D. Texas 1998). Courts have been very clear that projects must be evaluated together whenever “proceeding with one project, will, because of functional or economic dependence, foreclose options or irretrievably commit resources to future projects. *Fritiofson v. Alexander*, 772 F.2d 1225, 1241 n. 10 (5<sup>th</sup> Cir. 1985). Under 40 C.F.R. §1508.7, cumulative impacts are defined as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The DEIS’s treatment of cumulative impact falls short of NEPA requirements. The DEIS fails to consider the full scope of impacts. It also assesses the identified impacts without providing any detailed or quantified data to support the analysis.



Finally, the DEIS impermissibly relies entirely on presumed compliance with permitting requirements and mitigation plans to justify its conclusion that most of the adverse impacts environmental impacts associated with the Project would be reduced to less than significant levels.

Although it includes a small section on cumulative impacts, the DEIS failed to consider the cumulative environmental impacts associated with the planned Atlantic Bridge Project and the Access Northeast Project. Remarkably, the DEIS failed to even mention the Access Northeast Project. Since the AIM Project, the Atlantic Bridge Project and the Access Northeast Project are connected actions and thus “interrelated and functionally interdependent,” the present DEIS does not suffice to analyze their cumulative effects. *Stewart*, 996 F.Supp. at 683.

The DEIS represents that “three types of projects (past, present and reasonably foreseeable projects) could potentially contribute to a cumulative impact when considered with the proposed AIM Project.” However, the DEIS fails to consider the full scope of connected and similar actions as well as the cumulative impacts arising from the full scope of those actions. *See* Section 4.4.3.2.

## **VII. The DEIS Improperly Segments the AIM Project from Connected Actions**

One of the DEIS’s principle deficiencies is that it improperly segmented the AIM Project from other connected actions which are part of Spectra/Algonquin’s larger development plan to expand its existing pipeline system. Segmentation is a means of circumventing NEPA’s purpose by dividing a larger action into smaller proposed actions, thereby minimizing the environmental consequences of a larger plan by dividing it into several proposals for analysis in separate NEPA documents. *See Citizens’ Comm. to Save Our Canyons v. U.S. Forest Serv.*, 297 F.3d 1012, 1028 (10<sup>th</sup> Cir. 2002).

Indeed, Algonquin and its parent company, Spectra Energy, plan to modify other parts of its existing interstate pipeline system in expansions known as the Atlantic Bridge Project and the Access Northeast Project. While no formal applications have yet been filed, the DEIS acknowledges that the Atlantic Bridge Project would be similar in scope to the AIM Project and would involve facilities in the same region of influence. Nevertheless, the DEIS fails to consider the cumulative impacts of the Atlantic Bridge Project since it would “not occur at the same time” as the AIM Project and its details were unknown.

Remarkably, the DEIS makes no reference whatsoever to the Access Northeast Project, a \$3 billion dollar Spectra project that would expand the existing Algonquin pipeline from New Jersey through New York and Connecticut to Everett, outside of Boston. The Access Northeast Project is specifically intended to complement the AIM and Atlantic Bridge projects and would reportedly boost capacity on Spectra’s Algonquin (and Maritimes) pipelines by as much as 1 billion cubic feet a day, by installing new larger diameter pipelines on existing routes. FERC’s failure to analyze the Atlantic



Bridge Project and the Access Northeast Project as connected actions raises serious questions about the adequacy of the DEIS's cumulative impacts analysis.

As explained below, the Atlantic Bridge Project and the Access Northeast Project are clearly connected to the AIM Project, and thus must be reviewed, pursuant to NEPA, in the same EIS, particularly with regard to potential cumulative effects associated with the several projects. *See* 40 C.F.R. §1508.25(a).

To determine whether the AIM Project has been improperly segmented, the proper inquiry is whether the Atlantic Bridge Project and the Access Northeast Project are connected for the purposes of NEPA. Under 40 C.F.R. 1508.25(a)(1), actions are connected, meaning that they must be analyzed under the same EIS, if they:

- i) Automatically trigger other actions which may require environmental impact statements;
- ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; or
- iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

The purpose for the rule against segmentation is to “prevent an agency from dividing a project into multiple actions, each of which individually has an insignificant environmental impact, *but which collectively have a substantial impact.*” *Wilderness Workshop v. BLM*, 531 F.3d 1220, 1228(10th Cir. 2008) (emphasis added); *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969 (9th Cir. 2006). In other words, the rule prevents applicants and agencies from thwarting their NEPA obligations by improperly segmenting projects into smaller components in order to avoid considering their collective impact.

Under this definition, the AIM Project, the Atlantic Bridge Project and the Access Northeast Project are plainly connected actions that must be considered together under the same EIS. The primary collective purpose of these interdependent projects is to increase Spectra/Algonquin's existing pipeline capacity and to provide it access to growing natural gas supply and demand markets.

The fact that there is no formal application currently filed by Algonquin for the Atlantic Bridge Project or the Access Northeast Project should not preclude a finding that the NEPA process was unlawfully segmented. Algonquin should not be allowed to circumvent heightened environmental scrutiny by timing its applications to FERC in an effort to manipulate the NEPA process to avoid a cumulative impact analysis of its larger development plans.

In short, we believe that the AIM Project is a wholly arbitrary subdivision of a larger development project, apparently created for the purpose of thwarting NEPA review of the cumulative effects of the project in its entirety. The DEIS fails to evaluate the AIM Project in conjunction with the Atlantic Bridge Project and the Access Northeast Project even though the three projects are clearly connected and will unavoidably create a



greater cumulative effect than might be anticipated by a focused or limited review of any one of the interrelated segments.

In *Delaware Riverkeeper Network v. FERC*, No. 13-1015 (D.C. Cir. 2014), the D.C. Circuit recently applied NEPA's segmentation policy to a pipeline project. Giving considerable deference to the applicable NEPA regulations on segmentation (40 C.F.R. §1508.25), requiring federal agencies to consider the effect of "connected actions" and "similar actions" when carrying out their responsibilities under NEPA, the Court found that where four upgrades were "physically, functionally and financially connected and interdependent," they warranted a single NEPA analysis. We suggest that this analysis should be applied to the Project.

In light of the foregoing, we question why FERC would allow the AIM Project, the Atlantic Bridge Project and the Access Northeast Project to be submitted in a piecemeal fashion without a full analysis of their cumulative impacts. We urge FERC to reevaluate Spectra/Algonquin's overarching development plans to markedly expand its existing pipeline infrastructure in New York, Connecticut, Rhode Island and Massachusetts. By omitting from the DEIS any substantive discussion of the Atlantic Bridge Project and the Access Northeast Project, FERC has effectively failed to take into account the cumulative impacts of connected projects, and has thus acted contrary to NEPA and thwarted effective review by segmenting the AIM Project.

By failing to consider the Atlantic Bridge Project and the Access Northeast Project as interdependent pieces of Spectra/Algonquin's larger development plan to expand its existing pipeline infrastructure, FERC facilitated the unlawful segmentation of the AIM project.

The DEIS's failure to consider the cumulative impacts of the Atlantic Bridge and Access Northeast projects is not cured by its cursory treatment of twelve (12) other existing or proposed projects evaluated for potential cumulative impacts analysis. Notably, the DEIS fails to provide any substantive information about the additive impacts of those actions, and instead only provides brief descriptions of the actions in Table 4.13-1. Yet the information in Table 4.13-1 fails to provide anything substantive about the projects listed or any meaningful analysis of their potential for cumulative impacts.

As a result, the DEIS is inadequate in considering the combined environmental impacts of related existing and reasonably foreseeable pipelines within the Commission's jurisdiction, and a new EIS must be prepared that includes an analysis of the cumulative impacts of those projects, including the Atlantic Bridge Project and the Access Northeast Project.

#### **A. Marcellus Shale – Natural Gas Development**

Remarkably, the DEIS fails to address the effect of the Project together with the existing or reasonable foreseeable gas development activities, most notably hydraulic fracturing that has already been determined to have impacts on seismic activity. Instead, the DEIS omits any substantive discussion of foreseeable gas development, concluding



that the resources that may be affected by shale development would not be affected by the Project and the Project would not be affected by the development in the shale region.

On its face, this conflicts with NEPA policy and federal regulation, which require an analysis of the full range of a project's impacts "whether direct, indirect, or cumulative." (40 C.F.R. 1508.8). Under NEPA, indirect impacts are defined as those that occur "later in time or farther removed in distance" and may include

...growth inducing effects and other effects related to induced changes in the pattern of land use ... and related effects on air and water and other natural systems, including ecosystems. (40 C.F.R. §1508.8).

Despite this definition, the DEIS fails to address the indirect impacts of induced gas development, specifically the extent to which the presence of the proposed Project will encourage and facilitate the development of natural gas infrastructure. The DEIS also fails to consider how environmental impacts of the proposed Project may be cumulated with the impacts of gas development in the Marcellus shale region. FERC incorrectly limits its analysis to short- and long-term impacts resulting from construction of the proposed Project, ignoring the potential for future induced development of related infrastructure in New York.

Natural gas development in and around the pipeline's service area, extending into the Marcellus shale region, is a reasonably foreseeable consequence of the Project, and its effects must be considered as cumulative impacts. To the extent the DEIS considers Marcellus Shale activities, however, it fails to provide any quantified or detailed account of such activities, or consider their cumulative impacts.

While the DEIS includes a general acknowledgement that the Commission received numerous comments during the scoping for the Project about the cumulative impacts of natural gas development (including hydraulic fracturing) in the Marcellus shale region, it simply concludes, without discussion, that the local resources affected by natural gas development activities would not be affected by the Project since they would occur more than ten miles from the Project construction area, outside the sub-watersheds crossed by the Project, and outside the air quality control regions for the Project compressor stations.

The absence of any meaningful analysis in the DEIS regarding the cumulative impacts of natural gas development failed to take the requisite hard look at the environmental impacts of the proposed Project. A revised DEIS must be prepared to detail and analyze the cumulative impacts of natural gas development (including hydraulic fracturing) in the Marcellus shale region, including impacts from other reasonably foreseeable activities such as the construction of additional pipeline, access roads, compressor stations and other infrastructure. *See* Section 4.13



## **VIII. The Project May Adversely Affect Several Endangered and Threatened Species and Their Habitat**

The U.S. Fish and Wildlife Service (“FWS”) identified seven federally listed threatened or endangered species that are known to be present in the Project area. For three of the seven species identified (the Indiana bat, Northern long-eared bat and New England Cottontail) the DEIS cited incomplete survey results. For surveys that do exist for the remaining species, the DEIS fails to describe the methodology used or to identify or analyze any data. Further, the DEIS repeatedly recognizes the loss of habitat or changes to other vegetation but fails to carefully examine the impact of those losses on endangered and threatened species.

### **A. Indiana Bat**

The inadequacy of survey results is particularly apparent for the Indiana bat, a federally listed endangered species that may be impacted by the Project. Notably, the FWS identified a section of the Stony Point to Yorktown Take-up and Relay segment as having the potential to provide suitable summer habitat for the Indiana bat. Yet despite the likely presence of Indiana bats in the Project area, Algonquin has still not completed any survey of the area for bats.

While the DEIS states that Algonquin is in consultations with the FWS to *plan* surveys and develop and implement mitigation measures, the fact that there is still no complete survey of the Project in regard to this endangered species is astounding. Further, the DEIS fails to provide any meaningful analysis of the potential for habitat destruction. The incomplete survey results, lack of habitat destruction analysis and the lack of any suggested avoidance or mitigation measures, clearly demonstrate that the DEIS is inadequate.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file all survey results, any avoidance or mitigation measures developed in consultation with the FWS and a statement regarding Algonquin’s intent to comply with those measures.

FERC’s framing here as a mere “recommendation” what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken. Although a segment of the Project has been identified as having the potential to provide suitable summer habitat for the Indiana bat, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully requests that Algonquin make all further communication regarding the Indiana bat developed in consultation with the FWS available to the public for review and comment.

Algonquin’s failure to have any completed survey of the Project area for the presence of the Indiana bat deprived the public of a meaningful opportunity to comment

on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on the Indiana bat. *See* Section 4.7.1.2.

### **B. Bog Turtle**

The bog turtle is a federally listed threatened turtle that is potentially present within the Project area. Based on information from the FWS, bog turtles could be present in suitable wetlands along the proposed Southeast to MLV 19 Take-up and Relay segment in Putnam County, New York. Notably, consultation with the FWS identified a known bog turtle habitat within sixteen (16) miles of the proposed Project facilities in New York.

Although Algonquin completed surveys for bog turtles and identified a known bog turtle habitat in the vicinity of the Project area, the DEIS simply concludes without explanation that the Project would not likely affect the bog turtle.

Algonquin's failure to adequately explain its methodology in reaching a determination that bog turtles would not likely be affected by the Project deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on the bog turtle. *See* Section 4.7.1.2.

### **C. Northern Long-eared bat**

The northern long-eared bat, currently proposed for federal listing as an endangered species, may be impacted by the Project. Yet despite the possibility that Northern Long-eared bats are present in the Project area, Algonquin has still not completed any survey of the area.

While the DEIS states that Algonquin will be conducting surveys in connection with this species at the same time as the surveys it plans for the Indiana bat (see above), the incomplete results clearly demonstrate that the DEIS is inadequate.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file its survey results, any avoidance or mitigation measures developed in consultation with the FWS and a statement regarding Algonquin's intent to comply with those measures.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken and if so, whether such measures will be effectively designed. Although Algonquin continues to consult with the FWS to assess the potential occurrence of the Northern long-eared bat in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully suggests that



Algonquin be *required* to make all further communication regarding the Northern long-eared bat developed in consultation with the FWS available to the public for review and comment.

Algonquin's failure to have any survey completed of the Project area for the presence of the northern long-eared bat deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on the northern long-eared bat. *See* Section 4.7.1.3.

#### **D. Migratory Birds**

Potential impacts of the Project on migratory birds, including FWS Birds of Conservation Concern (BCC)-listed birds, would include temporary and permanent loss of habitat associated with the removal of existing vegetation during construction. Noise and other construction activities could also potentially affect foraging and breeding activities that occur during the nesting season. Migratory birds could also be affected by the operation and maintenance of the new facilities, including a reduction in habitat, potential increase in parasitic bird species, edge effects and ongoing disturbances associated with maintenance.

The Haverstraw to Stony Point Take-up and Relay segment of the Project as currently envisioned runs adjacent to and across the section of the Harriman and Sterling Forests' Important Bird Area (IBA) in Rockland County, New York. This diverse forested area supports a healthy representative breeding community of migratory birds which may be potentially harmed or disturbed by impacts associated with the Project, including tree removal and construction related disturbances.

While the DEIS outlines mitigation measures for Algonquin to implement to potentially minimize the proposed Project's impact on migratory birds, it states that the FWS is still reviewing the AIM Project for migratory bird impacts, and Algonquin is still in consultations with the FWS and NYSDEC. The absence of complete information as to the potential impacts of the Project on migratory birds demonstrates that the DEIS is incomplete.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file any updated consultations with the FWS Field Office in New York regarding migratory birds including and avoidance measures developed.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether effective measures to mitigate harms to the species in the project area will ever be undertaken. Although Algonquin continues to consult to assess the potential impact on migratory birds in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully suggests that



Algonquin be *required* to make any further communication regarding migratory birds developed in consultation with the FWS available to the public for review and comment.

The absence of any final assessment by the FWS regarding the potential impact of the Project on migratory birds deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on migratory birds. *See* Section 4.7.2.

### **E. Bald Eagles**

As of March 2013, adult and immature bald eagles were observed flying along the shorelines and hillsides of the Hudson River and an active nest was observed less than 3 miles from the Project. However, the DEIS does not include any substantive analysis of the impacts the Project would have on bald eagle habitats.

While the DEIS states that Algonquin is in consultation with the FWS and NYSDEC to discuss survey results and to develop and implement appropriate avoidance and mitigation measures to avoid impacts on bald eagles in the Project area, the absence of complete information on the bald eagle suggests that the DEIS is inadequate.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin file any updated consultations with the FWS and NYSDEC regarding bald eagles including and avoidance measures developed.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken. Although Algonquin continues its consultation to assess the potential impacts on bald eagles in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE respectfully requests that Algonquin make any further communication regarding bald eagles developed in consultation with the FWS or NYSDEC available to the public for review and comment.

Algonquin's failure to assess the potential impacts on bald eagles in the Project area deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on bald eagles. *See* Section 4.7.3.

### **F. Timber Rattlesnakes**

The timber rattlesnake is a state-listed threatened species that inhabits deciduous forest in rugged terrain. According to NYSDEC, timber rattlesnakes are known to be present along the Stony Point to Yorktown Take-up and Relay segment of the Project. Possible impacts to the timber rattlesnake include alteration of forested habitat and direct impacts including mortality. Since Algonquin would not be able to adhere to NYSDEC's



seasonal restrictions for timber rattlesnakes, the DEIS outlined additional measures to be implemented by Algonquin to mitigate impacts to rattlesnakes.

Yet despite the likely presence of timber rattlesnakes along the Project area, Algonquin has still not completed its survey for snakes or performed any included any analysis of habitat destruction.

While the DEIS states that Algonquin is engaged in consultation with the NYSDEC to identify potential existing habitats in construction work areas in Rockland County and determine proper mitigation measures, the fact that there is still no complete survey of the Project in regard to this state-listed threatened species is disturbing. In addition, the DEIS fails to provide any meaningful analysis of the potential for any habitat destruction.

Based on the foregoing, the DEIS *recommends* that Algonquin file any results for timber rattlesnakes habitat, permit requirements, and avoidance or mitigation measures developed in consultation with the FWS and NYSDEC regarding timber rattlesnakes.

FERC's framing here as a "recommendation" what should be a necessary precondition casts doubt on whether measures to mitigate harms to the species in the project area will ever be undertaken. Although Algonquin continues to consult to assess the potential impacts on timber rattlesnakes in the Project area, FERC has not received complete survey results, nor has it sufficiently addressed habitat destruction or mitigation measures to justify approval of this Project at this time. SAPE requests that Algonquin make any further communication regarding timber rattlesnakes developed in consultation with the FWS or NYSDEC available to the public for review and comment.

Algonquin's failure to have any survey completed of the Project area for the presence of timber rattlesnakes deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze any potential impact that the Project would have on timber rattlesnakes. *See* Section 4.7.5.1.

## **G. Coastal Zone Management**

The Stony-Point to Yorktown Take-up and Relay segment crosses the coastal zone management area associated with the Hudson River in the Town of Stony Point and in the City of Peekskill. The Project plans to cross the Hudson River using the HDD method to avoid impacts on aquatic resource and potential impacts on critical environmental areas.

Algonquin filed its consistency assessment application with the New York State Department of State ("NYSDOS") in February 2014 describing how the Project would be consistent with state coastal policies as well as policies of the town approved waterfront revitalization programs. To date, however, NYSDOS has yet to approve Algonquin's consistency assessment application.



Since NYSDOS has not yet concurred with Algonquin's consistency assessment application, the DEIS fails to address whether or not the Project would or would not be consistent with the above mentioned coastal zone management policies to justify approval of this Project at this time.

Based on the foregoing, the DEIS *recommends* that Algonquin file documentation of concurrence from the NYSDOS that the Hudson River crossing is consistent with New York coastal policies, including the Stony Point and Peekskill waterfront revitalization plans. SAPE requests that Algonquin be *required* to make any further communication regarding concurrence from the NYSDOS that the Hudson River crossing is consistent with New York coastal policies available to the public for review and comment.

Algonquin's failure to have its consistency assessment application approved by NYSDOS deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze whether or not the proposed Project's Hudson River crossing is consistent with New York coastal policies. *See* Section 4.8.4.1.

## **IX. Analysis of Air Quality and Climate Change Impacts is Inadequate**

As discussed below, the DEIS dramatically underestimates the extent to which Project construction and operation will emit air pollutants and fails to present a comprehensive analysis of the direct, indirect and cumulative effects of the Project on air quality.

The DEIS acknowledges that construction and operation of the proposed Project will result in significant emissions of various air pollutants, including NO<sub>x</sub>, VOCs, carbon monoxide, particulate matter, sulfur dioxide and GHGs. These pollutants affect air quality—and therefore human health—in a variety of ways. NO<sub>x</sub> is a precursor of both ozone and fine particulate matter. VOCs are also an ozone precursor. Fine particulate matter is linked to increased heart attacks, aggravated asthma and decreased lung function, and for people with heart or lung disease, premature death. Ozone exposure can lead to coughing, chest pain and throat irritation. It also exacerbates pre-existing bronchitis, emphysema and asthma and can reduce lung function.

With the exception of sections exploring whether air emissions trigger regulatory requirements, the DEIS does not undertake any analysis of the potential impacts on those who may be at risk of exposure to the HAPs. FERC's failure to undertake any meaningful analysis of the effects of emissions from Project construction and operation is particularly concerning, given that the proposed Project would result in significant emissions of NO<sub>x</sub> and VOCs. *See* Section 4.4.3.2.

### **A. Compressor Stations / M&R Stations**

The compressor stations in New York are already major sources of Hazardous Air Pollutants (HAPs). Peer-reviewed scientific studies indicate that emissions from



compressor stations and other shale gas infrastructure are associated with negative health impacts. Current emissions will be significantly increased by the expansion of the Southeast and Stony Point compressor stations, and the region including Putnam, Rockland and Westchester counties is already considered a non-attainment zone for air quality standards according to the United States Environmental Protection Agency (USEPA).

Submissions made by Algonquin (Resource Report #9 in Docket CP12-96-000) do not reflect the aggregate (existing or proposed) and cumulative emissions from compressor stations, metering stations and pipelines for the Project. In addition, modifications are needed to the M&R stations in Peekskill, Cortlandt and Stony Point, New York, to connect the existing valve to the new 42-inch diameter pipeline. However, the design modifications are still not complete.

Without considering any proposed design modification to the M&R stations, the DEIS largely dismisses the impacts of air pollution, and concludes that modeling analysis for all modeled pollutants would not contribute to a violation of the National Ambient Air Quality Standards (NAAQS). Since Algonquin's M&R design modifications are not yet complete, the DEIS could not have addressed the unknown.

Based on the foregoing, the DEIS *recommends* that prior to the end of the DEIS comment period, Algonquin provide an update regarding the air permitting requirements associated with the modification to the M&R stations in New York, as well as any application filed with NYSDEC regarding air permitting/registration. SAPE requests that Algonquin be *required* to provide its update requiring the air permitting requirements and that it be further *required* to make any further communication regarding the air permitting requirements associated with the modification to the M&R stations in New York available to the public for review and comment.

The absence of any completed design modifications for the M&R stations in New York deprived the public of a meaningful opportunity to comment on the proposed Project. A revised DEIS must be prepared for review and public comment to analyze the final design modifications for the M&R stations in New York. *See* Section 4.11.1.2.

## **B. Fugitive Emissions**

The DEIS fails to adequately address fugitive emissions from the proposed Project. The DEIS provides an annual estimate of these emissions in Table 4.11.1-13, but that table fails to provide any basis for those estimates. In particular, the DEIS provides no analysis of potential malfunctions of either pipeline or compressors that could lead to unintended emissions of various HAPs. This is a significant oversight, given that the PHMSA reported *nearly 300 significant pipeline incidents* in 2013. The data makes clear that spills, explosions and other unintended releases of pollutants from pipelines occur with a measurable degree of frequency. The resulting—and equally predictable—emissions should be taken into account as part of the DEIS's assessment of the impacts associated with the Project.



The DEIS's failure to adequately address fugitive emissions from the proposed Project and further, its failure to provide any data or methodology to support its conclusion, deprived the public of a meaningful opportunity to comment on the proposed Project and failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to adequately address fugitive emissions from the proposed Project. *See* Section 4.11.1.3.

### **C. Cumulative Impacts on Air Quality**

As discussed *supra*, the DEIS's analysis of cumulative impacts of the proposed Projects on air quality is insufficient. The DEIS concedes that the construction and operation of the Project will contribute cumulatively to air quality impacts, but concludes that it does not anticipate that the construction and operation of the proposed Project facilities will have a significant impact on air quality. Although it is unclear exactly to what extent the DEIS has calculated the potential emissions from other projects and included them in its cumulative impact analysis, the DEIS nonetheless discounts the impacts of those projects without offering any justification for such discounting of those dangers.

The DEIS's failure to adequately address the cumulative impacts of the proposed Projects on air quality deprived the public of a meaningful opportunity to comment on the proposed Project. Moreover, the DEIS failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to adequately address the cumulative impacts of the proposed Projects on air quality. *See* Section 4.13.7.

### **D. Climate Change**

The DEIS fails to undertake a meaningful analysis of the climate change impacts of GHG emissions, including fugitive GHG emissions, which would result from the construction and operation of the Project. The DEIS concludes, without pointing to any evidence in support of its conclusion, that emission of GHGs from the proposed Project would not have any direct impacts on the climate change in the Project area. As discussed *supra*, this conclusion fails to take into account the likelihood of a significant incident with the pipeline, resulting in a spill, leak, explosion or other unintended emission of GHGs.

The absence of any meaningful analysis of the climate change impacts of GHG emissions associated with this Project deprived the public of a meaningful opportunity to comment on the proposed Project. The DEIS, moreover, failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to analyze the climate change impacts of GHG emissions associated with this Project. *See* Section 4.13.8.

## VII. Environmental Justice

In New York, environmental justice communities are defined according to the following thresholds: communities where 23.6 percent of the individuals within a given census block are living below the poverty line as low-income populations; and/or communities where minorities comprise more than 51.1 percent of the population within a given census block as minority populations. Low income communities and communities of color have historically been overburdened as a result of air pollution from energy-generating facilities. In particular, the proposed Project would have adverse impacts on neighborhoods within a 12.5-mile radius of downtown Peekskill, New York, an area that is already home to more than its fair share of hazardous waste facilities.

The primary adverse impacts on the environmental justice communities associated with the construction of the Project would be the temporary increases in dust, noise and traffic from the Project construction. These adverse impacts would occur along the entire pipeline route. However, the DEIS does not provide sufficient financial analysis of the Project to effectively determine if the Project would result in a disproportionately high and adverse impact on these minority and low-income populations.

Other than acknowledging that two census block groups crossed by the Project in Westchester County have minority populations greater than the minority threshold, the DEIS lacks any meaningful analysis of environmental justice issues. The lack of any discussion of the costs of the Project, including a full analysis of the discarded alternatives, prevents any meaningful understanding of the impact upon environmental justice communities.

The absence of any meaningful analysis in the DEIS of the proposed Project's impact on environmental justice issues along the pipeline route failed to take the requisite hard look at the proposed Project's environmental impact. A revised DEIS must be prepared for review and public comment to analyze the impact on environmental justice issues along the pipeline route. *See* Section 4.9.10.



## CONCLUSION

For all of the reasons stated above, the DEIS is premature, incomplete, unsupported by evidence and fails to adequately consider the direct, indirect and cumulative impacts of the proposed Project. The proposed Project is unnecessary, improperly located in close proximity to a nuclear power facility, with significant environmental impacts that have not been fully addressed in the DEIS. The defects in the DEIS are fundamental and pervasive. We therefore request that the Commission: (1) take no further action with respect to permitting of the proposed Project on the basis of this profoundly flawed DEIS; and (2) prepare a revised DEIS with a new period for review and public comment to ensure that the FERC satisfies its obligations under NEPA.

Respectfully submitted,

Stop the Algonquin Pipeline Extension (SAPE)

### Founding Members:

Susan Van Dolsen  
Paula Clair  
Suzannah Glidden  
Susan McDonnell  
Jerry Ravnitzky  
Marian Rose  
Ellen Weininger

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**MICHELLE WU**  
**BOSTON CITY COUNCIL**

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CITY OF BOSTON

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**Docket #CP14-96-000**

**November 17, 2014**

**Chairwoman LaFleur,**

Thank you for your response to the joint request of myself and nine of my Boston City Council colleagues regarding the need for a Supplemental Draft Environmental Impact Study. I write to you today to notify you of a troubling misstatement in Spectra's latest communication to FERC.

In a letter dated October 31, 2014, Spectra stated that, "Numerous discussions with Boston Mayor Martin Walsh's office as well as the Boston City Council, including City Councilors Matt O'Malley and Michelle Wu, occurred over the summer and into the fall." I would like to note for the record, that the only time I met with and discussed the West Roxbury Lateral with representatives from Spectra was at a small community meeting on October 2, 2014, to which I had been invited by community residents. A member of my staff attended two other meetings, one sponsored by Spectra on September 3, 2014 and the other sponsored by FERC on September 8, 2014, but I was not present.

It is critical that information being sent to FERC and posted to the public docket is accurate, and it is my hope that the record will be corrected to properly reflect my communications with Spectra throughout this process.

I would like to further note my continued opposition to this proposal due to Spectra's failure to be forthright with the community throughout this process.

Sincerely,

**Michelle Wu**  
**Boston City Councilor At Large**

2014-00268

**BOSTON CITY HALL, ONE CITY HALL SQUARE, BOSTON, MASSACHUSETTS, 02201**  
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November 21, 2014

**VIA eFiling**

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

**Re: FERC Proceeding CP14-96: Algonquin Gas Transmission, LLC Algonquin  
Incremental Market ("AIM") Project**

Dear Ms. Bose:

Enclosed for filing please find the report of Accufacts, Inc. prepared on behalf of the Town of Cortlandt, commenting on the Draft Environmental Impact Statement for the AIM Project. Exhibits 4 and 5 of the report refer to Critical Energy Infrastructure Information ("CEII") materials. Consistent with FERC's eFiling guidelines, we are filing both a public copy of the report from which Exhibits 4 and 5 have been redacted and, under seal, a full copy including Exhibits 4 and 5.

Please contact me if you require any additional information.

Sincerely,



Daniel Mach

Cc: Anita Rutkowski Wilson  
Vinson & Elkins LLP  
Attorneys at Law  
2200 Pennsylvania Avenue NW, Suite 500 West  
Washington, DC 20037-1701

## Accufacts Inc.

“Clear Knowledge in the Over Information Age”

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**November 3, 2014**

**To: Mr. Thomas Wood  
Town Attorney  
Town of Cortlandt  
1 Heady Street  
Cortlandt Manor, NY 10567**

**Re: Review of Algonquin Gas Transmission LLC’s Algonquin Incremental Market (“AIM Project”), Impacting the Town of Cortlandt, NY, FERC Docket No. CP14-96-0000, Increasing System Capacity from 2.6 Billion Cubic Feet (Bcf/d) to 2.93 Bcf/d**

### **Executive Summary**

Accufacts Inc. was retained by the Town of Cortlandt (“Cortlandt”) to perform a basic system review and to provide a brief analysis of the above FERC filing as it may affect Cortlandt. The project as submitted to FERC is asking for several major modifications on the Algonquin gas transmission system to increase gas capacity by approximately 342 dekatherms per day (Dth/d) from Ramapo, NY, to move gas eastward to Connecticut, Rhode Island and Massachusetts markets. The AIM proposal impacting Cortlandt upgrades the existing 26-inch and 30-inch looped pipelines between the Stony Point and the Southeast Compressor Stations in New York, by removing sections of existing 26-inch lower 674 psig Maximum Allowable Operating Pressure (“MAOP”) pipe, replacing it with approximately 8 miles of new 42-inch higher 850 psig MAOP pipe, and installing new interconnecting pressure reducing/letdown valves to take advantage of the higher MAOP pipe (See Exhibit 1).<sup>1, 2, 3</sup> A segment of the new 42-inch installation may also involve approximately 2 miles of pipe looped on new right-of-way (“ROW”) running south of the Indian Point nuclear power plant complex within Cortlandt. Modifications to a metering and regulating station servicing the Cortlandt, NY area are also

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<sup>1</sup> Looping is the connection of two or more pipes between two points, splitting gas flow to reduce pressure drop through the connected sections of the pipeline due to pressure limitations or for increasing the flow rate in a bottlenecked or constrained segment or section.

<sup>2</sup> MAOP is a term defined in federal minimum pipeline safety regulations that defines the maximum pressure under which a gas pipeline may normally be operated. Pressures greater than MAOP are allowed in certain situations.

<sup>3</sup> There are varying numbers in AIM Project filings to FERC for the miles of pipe replacement within Cortlandt. The 8 mile figure is derived from Exhibit G data.

included in the project. This report focuses on the gas transmission infrastructure that could impact Cortlandt.

The following are major findings and observations from my analysis of the AIM Project proposal, sections of the AIM DEIS, and a detailed review of CEII information supplied in the Exhibit Gs submitted to FERC by Algonquin that contain important system information.<sup>4</sup> Exhibits 4 and 5, which are included as attachments, contain more detailed information bolstering my general observations and findings, but these two specific Exhibits are CEII protected under a nondisclosure agreement (“NDA”), and are not for public release or distribution, even among Cortlandt officials, unless they have also signed a FERC CEII NDA.

### **Major Accufacts Findings and Observations for Cortlandt concerning the AIM Project:**

- 1) The new 42-inch pipeline in Cortlandt is considerably oversized/overbuilt for the stated capacity increase of 342 Dth/d claimed for this project.
- 2) Actual gas velocities, an important variable driving design, for the pre-AIM existing gas transmission pipelines spanning Cortlandt are within acceptable ranges, but after the AIM installation are so low that considerable future possible throughput increases can be easily accommodated for these segments.
- 3) Further Algonquin Pipeline pipe expansions in New York State are likely given the 42-inch pipe installations proposed for AIM, and the extremely high gas velocities in other existing segments of the New York system further downstream of Cortlandt. However, the AIM proposal and the DEIS contain no evaluation of the impacts of these future expansions.
- 4) The Safety Evaluation and Analysis for the Indian Point Nuclear Plant (“IPEC”) submitted by Entergy concerning the risk associated with the 42-inch AIM pipeline is seriously deficient and inadequate.
- 5) Additional precautions are warranted for the proposed southern 42-inch pipeline route near the Buchanan-Verplanck Elementary school.

Expanding on the above major findings and observations:

- 1) The new 42-inch pipeline in Cortlandt is considerably oversized/overbuilt for the stated capacity increase of 342 Dth/d claimed for this project.**

The following Exhibits included as Attachments supplement this report:

- 1) Exhibit 1 is a simple schematic developed from information in the public domain of the existing and proposed major pipeline segments for the AIM Project that could impact

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<sup>4</sup> Accufacts requested the CEII information from FERC on September 11, 2014 and received the files from Algonquin on October 6, 2014.

Cortlandt. The AIM Project is proposing to modify the pipeline segments between the Stony Point and Southeast Compressor Stations into two significantly different operating loops via new mainline interconnects utilizing pressure reducing/letdown valving installations, and various pig launcher/receiver modifications (to be installed within Cortlandt) to produce: (a) a “Smaller Loop” mainline system consisting of first an existing 30-inch pipeline reducing to an already existing 26-inch mainline, and (b) a “Larger Loop” mainline system consisting of new proposed 42-inch pipe reducing down to an already existing downstream 30-inch mainline (See Exhibit 1).<sup>5</sup>

- 2) Exhibit 2 is a figure captured from the AIM Project DEIS showing the relative location of where the existing 26-inch pipeline will be removed and replaced by new 42-inch pipeline that AIM has labeled “Take-up and Relay (T&R),” in essentially the same right-of-way (“ROW”) through most of Cortlandt.<sup>6</sup>
- 3) Exhibit 3 is a figure taken from the AIM DEIS depicting existing and proposed Algonquin Hudson River crossings for the AIM Project.<sup>7</sup>
- 4) Exhibit 4 (CEII Protected) is a hydraulic profile (pipeline pressure vs. pipeline milepost) developed by Accufacts for the smaller diameter (30-inch and 26-inch) lower MAOP pipeline (Smaller Loop) segment within New York State, pre and post AIM Project, for the pipelines between the Stony Point and Southeast compressor stations, incorporating Exhibit G information provided by Algonquin’s submission to FERC.
- 5) Exhibit 5 (CEII Protected) is a hydraulic profile developed by Accufacts for the larger diameter (42-inch and 30-inch) higher MAOP pipeline (Larger Loop) segment within New York State, pre- and post-AIM Project, for the pipelines between the Stony Point and Southeast compressor stations, incorporating the Exhibit G information provided by Algonquin’s submission to FERC.

Exhibits 1, 2, and 3 provide a quick perspective of the pipeline changes and general routing for the AIM Project in that specific segment of concern between the compressor stations that bridge Cortlandt. Exhibits 4 and 5 provide a more detailed technical perspective of some of the hydraulics (pressures, MAOP, and gas velocities at certain locations along the pipelines) for the flow cases that drive various Accufacts conclusions and findings. For ease of reference in Exhibit 4 and 5, I have set the milepost (“MP”) reference for the segments beginning at the Stony Point, NY compressor station at zero. The pipelines crossing Cortlandt generally begin at the landfall on the east side of the Hudson River, and are thus

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<sup>5</sup> Pig launcher/receivers are above ground installations to permit the periodic launching or receiving, depending on their location within the system, of multi-ton inline inspection tools inserted into an operating transmission pipeline to assess for various pipeline imperfections, or certain possible threats, to pipeline integrity.

<sup>6</sup> Algonquin Gas Transmission LLC Docket No. CP14-96-000, FERC/EIS-0254D, “Algonquin Incremental Market Project Draft Environmental Impact Statement,” filed to the FERC Docket on 8/6/14, p. 2-2.

<sup>7</sup> *Ibid.*, p. 3-20.

between approximately MP 3.5 and 11.5 as indicated on Exhibits 4 and 5. Exhibit 4 contains an approximately 5 mile shorter length for the Smaller Loop between compressor stations post versus pre AIM, which Accufacts cannot explain from the Exhibit G data provided. This discrepancy suggests an error in this important submission to FERC. This difference does not affect Accufacts' major findings or conclusions, however.

In addition, I have reviewed the Hudson River crossing DEIS discussions currently consisting of: two existing 24-inch pipelines, and an existing 30-inch pipeline, and a proposed new 42-inch pipeline crossing to be routed either south of the existing three gas pipeline river crossings or at a more northern crossing (the Hudson River Northern Route Alternative, or "HRNRA") near the existing three pipelines (See Exhibit 3).<sup>8</sup> This new 42-inch Hudson River crossing, to be installed via Horizontal Directional Drill, or HDD, if possible, would connect to new onshore 42-inch pipelines installed on each side of the Hudson River as part of AIM. The southern 42-inch crossing option would incorporate a new additional pipeline right-of-way of approximately 1 3/4 miles within Cortlandt as it is routed out of the existing pipeline ROW and south of the Indian Point Energy Complex passing a church and an elementary school. The route eventually rejoins the existing 26-inch ROW east of IPEC to continue its route through Cortlandt in the existing ROW as indicated in Exhibit 3 filed to the FERC Docket on August 6, 2014 as the Draft Environmental Impact Statement, or DEIS.

A detailed review of the CEII files captured by the hydraulic profile in Exhibit 5 clearly demonstrates the 42-inch pipeline is not needed for the AIM project claimed capacity increases of 342 Dth/d. The Larger Loop is taking considerable pressure drop introduced from a new "midstream" mainline pressure reducing/letdown valve located at the end of the new pipe MAOP 42-inch upgrade at the edge of Cortlandt, essentially wasting horsepower added at the Stony Point compressor station (See Exhibits 1 and 5). The 42-inch proposal overbuilds the system for the capacity/horsepower increases submitted for AIM. The Stony Point Compressor station after the AIM project, fails on both the Larger Loop and Smaller Loop mainline systems to operate anywhere near Stony Point Compressor Station discharge pipeline MAOP, and the 42-inch to 30-inch mainline pressure reducing/letdown valve takes a major pressure drop for the stated maximum flow conditions.<sup>9</sup> This indicates that added AIM horsepower is wasted at the Stony Point Compressor station increasing pollution emissions.

Exhibit 5 can also be used to demonstrate that a new smaller (i.e., 30 or 36-inch 850 psig MAOP pipe instead of the proposed 42-inch) can provide the additional 342 Dth/d claimed in the AIM proposal. Installation of higher rated MAOP pipe on the discharge segment of Stony Point Compressor Station deals with one bottleneck on this segment spanning the compressor stations. AIM is incomplete, however, as it fails to also adequately address the

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<sup>8</sup> The proposed installation of the 42-inch across the Hudson River and south of Indian Point is in a new ROW within the Town of Cordlandt. The existing two, 24-inch and one, 30-inch crossings under the Hudson River will remain active and pressurized, in "standby" backup service if ever needed, which is a reasonable operating approach for this river crossing.

<sup>9</sup> For the Exhibit G CEII cases reviewed, the Smaller Loop does not take pressure drop at the new pressure reducing/letdown valve to stay within the 26-inch mainline MAOP.

weaker bottleneck mainline segments downstream of Cortlandt entering the Southeast Compressor Station that are experiencing extremely high actual gas velocities.

Installation of the overbuilt/oversized AIM 42-inch pipe appears to be an initial effort by Algonquin to minimize future construction impacts by installing a pipeline larger than that needed for the present stated application, but positions the system for future major increased expansions. This is especially true if further downstream pipeline “bottlenecks” to the Southeast Compressor Station can be overcome with additional pipe replacements/upgrades to reduce the extreme actual gas velocities in these remaining existing mainline pipes.

The AIM Project is clearly oversized and is only a partial step toward a more system-wide pipe upgrade path within the state of New York. The AIM Project thus appears to be either an unjustified pipeline expansion or a segmentation of a larger, system-wide upgrade. The AIM Project effort is substituting quicker-to-install compressor horsepower placed at Stony Point against additional needed pipe replacement. Such a quicker path may be an attempt to avoid a proper environmental review and introduces a substantial loss of pipeline system efficiency via wasted horsepower and subsequent increased air pollution emissions. This inefficiency is not addressed in AIM’s DEIS.

**2) Actual gas velocities, an important variable driving design, for the existing gas transmission pipelines spanning Cortlandt are within acceptable ranges, and after the AIM installation are so low that considerable future possible throughput increases can be easily accommodated for these segments.**

For a natural gas transmission pipeline a critical variable, actual gas velocities (in ft/sec, or fps) along the system, is very relevant, usually driving piping mainline modification/addition decisions and compressor horsepower installations. Actual gas velocities within a pipeline segment are mainly a function of:

1. the internal pipeline diameter,
2. the required gas flow along a given pipeline segment, usually reported at standard flow conditions,
3. pipeline pressure, which decreases and varies down a pipeline, and
4. pipe segment MAOP.<sup>10</sup>

Because natural gas is compressible as pressure decreases along a pipeline, actual gas velocities increase for the same cross-sectional area of the pipe and same gas flow stated at standard conditions. Gas flow as stated at standard conditions of temperature and pressure can vary depending on possible major additions and takeoffs along a specific pipeline segment, though many segments do not have major receipts or deliveries. Because the pressure at the downstream segment is less than the upstream pressure, actual mainline velocity is usually (but not always, depending on such factors as receipts/deliveries) highest for pipeline segments immediately upstream of compressor stations (at lowest segment

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<sup>10</sup> There is an associated effect of gas temperature on gas velocity but this influence in long transmission pipelines is usually not leveraging.

pressure). High gas velocities can also be experienced in segments where the effective cross sectional area of a pipeline, or looped pipelines, is restricted or “pinched,” compared to the rest of the segments experiencing similar standard flows and pressures.

Accufacts has observed that maximum actual gas velocities along a specific pipeline have usually been set by company internal standards that keep velocities well below those that could result in mainline erosion and based on other considerations. As a result, federal minimum pipeline safety regulations have not established maximum gas velocities for gas transmission pipelines. Unfortunately, Accufacts has found that more than one company has elected to change, ignore, or modify their own internal maximum historical gas velocity standards in recent FERC filings in order to minimize project costs and/or accelerate applications/approvals with FERC and project startup on multibillion dollar expansion projects. For example, I place little credence in studies or industry standards submitted to FERC that try to convey that a maximum gas velocity of 100 fps is appropriate for gas transmission pipelines.<sup>11</sup> For many reasons, including close proximity to population areas, gas transmission velocities should be set at limits well below those of production pipelines.

For gas transmission pipelines, two cases are usually important in actual gas velocity determinations: the velocities at “design” capacity, and the velocities at “peak flow” which will usually be higher than the design case. These two terms are often not defined in a FERC process and their misuse or misapplication can have serious consequences on safe and appropriate operation of a gas transmission pipeline.

Peak flow cases and their probable duration usually establish the maximum actual gas velocity design control within a transmission pipeline segment, as well as the needed additional horsepower and pipeline operating pressure, but this should be confirmed by the development of a hydraulic profile (pipeline operating pressure vs milepost) of the boundary case incorporating the gas additions and removals along a pipeline system that may differ between the cases. Peak flow cases usually set the maximum operating pressure which can affect a safety design review within a pipeline segment, but not always. The information provided in Exhibit Gs usually permits one to develop such a simple hydraulic profile as that captured in Exhibits 4 and 5. Fortunately, the Exhibit Gs and supporting documents for the AIM Project provided under CEII Nondisclosure Agreements provided sufficient relevant details to reliably evaluate this system at important points where actual gas velocities may be critical for the AIM Project and provide an indication where pipeline bottlenecks remain for possible future capacity increases.

A detailed analysis of the information provided under FERC CEII nondisclosure and Algonquin NDA agreements has allowed Accufacts to develop the hydraulic profiles of Exhibits 4 and 5.<sup>12</sup> Further, Accufacts’ calculations based on this CEII protected data

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<sup>11</sup> Accufacts Report to Delaware Riverkeeper, “Evaluation of Actual Velocity Critical Issues Related to Transco’s Leidy Expansion Project,” dated Sept 8, 2014 (FERC Docket No. CP13-551, Accession No. 20140910-5084 submitted 9/10/2014).

<sup>12</sup> Accufacts was required to take a highly unusual step of signing an Algonquin NDA, which raises serious questions about the CEII process in this FERC filing.



indicate that actual gas velocities do not exceed prudent velocities in the pipeline segments spanning Cortlandt for both the AIM base and expansion cases. In fact, the resulting very low gas velocities for these segments after AIM suggest the pipelines crossing Cortlandt will be able to easily accommodate considerable future expansions via horsepower increases at the Stony Point compressor station.

- 3) Further Algonquin Pipeline pipe expansions in New York State are likely given the 42-inch pipe installations proposed for AIM, and the extremely high gas velocities in other existing segments of the New York system further downstream of Cortlandt. However, the AIM proposal and the DEIS contain no evaluation of the impacts of these future expansions.**

While the gas transmission pipelines crossing Cortlandt for the CEII cases reviewed indicate actual gas velocities well within acceptable ranges, this is not the case for much of the existing looped pipelines remaining downstream of Cortlandt but upstream of the Southeast Compressor Station in New York. Actual gas velocities on these existing 26 and 30-inch downstream transmission pipelines are at the highest levels that Accufacts has observed in the many FERC CEII filings we have been asked to review (well beyond 60 feet per second). Such high gas velocities suggest further pipe replacement projects in the Algonquin system in New York are needed or forthcoming. Such additional expansions should not be segmented in phases, but should be considered as one overall project requiring a complete environmental review considering their cumulative environmental impact. FERC needs to pursue this important possible segmentation question in further detail.

Because of gas compressibility, pipeline segments facing high gas velocities from increased demand can reduce velocities by increasing compressor horsepower with one or a combination of the following approaches: (1) increase system operating pressure subject to the MAOP limitations of the pipe, (2) rerate or uprate the segment of the pipe MAOP following certain pipeline safety minimum regulations for such upgrades that can introduce some serious risks unless a proper integrity hydrotest is performed, (3) replace or loop the pipeline usually with higher MAOP rated pipe, to yield a larger effective diameter for the segment, and/or (4) shorten the interval between compressor stations by adding new compressor stations that essentially raise the system average operating pressure.

While the 42-inch take and replace segments (42-inch to replace portions of the existing 26-inch) overcompensate for basically the upstream half of the looped system between Stony Point and Southeast Compressor Stations within New York, the remaining existing looped New York pipeline systems downstream of Cortlandt are a serious impediment given inefficiencies of the looped remaining pipeline system both in limited pipe diameter and low MAOP. I would anticipate further 26-inch pipe replacement proposals on this segment downstream of Cortlandt and upstream of the Southeast Compressor Station in the near future that take full advantage of additional capacity of the 42-inch proposed installation applied for in this Docket. Commensurate with such an additional pipe segment upgrading will most likely be a need for additional compressor horsepower at Stony Point.

**4) The Entergy-submitted Safety Evaluation and Analysis for the Indian Point Nuclear Plant (“IPEC”) concerning the risk associated with the 42-inch AIM pipeline is seriously deficient and inadequate.<sup>13</sup>**

After a careful review, Accufacts has concluded that the above referenced Entergy Safety Evaluation and Analysis (“Analysis”), which includes enhanced pipeline measures proposed by the pipeline operator for the 42-inch pipe segment near IPEC fails to adequately capture the threat and, more importantly, prudently demonstrate that rupture of the new 42-inch higher MAOP pipeline will not markedly impact IPEC facilities, including IPEC’s ability to “failsafe” shutdown from such a pipeline rupture. A 42-inch pipeline rupture is a far greater release event than that from the existing 26- or 30-inch lower MAOP gas transmission pipelines now operating in close proximity to IPEC.

A primary deficiency in the Analysis is the critical assumption of a three minute response time to identify, acknowledge, and close appropriate gas mainline remote isolation valves in event of a pipeline rupture. This assumption is unrealistically optimistic, ignoring both systemic dynamics (compressor and pipeline system rupture dynamics/interactions that mask remote rupture identification), uncertainty in the SCADA monitoring that will further delay remote recognition of a pipeline rupture, and control room operator confusion and related human factors that will also easily further delay control room remote response actions of a pipeline rupture, all of which will work to drive response well beyond the assumed 3 minute time. In addition, the 3 minute assumption disregards initial release and subsequent blowdown times dictated by the laws of thermodynamics related to pipeline rupture, even large 42-inch gas transmission pipelines. History is filled with clear examples of gas transmission pipeline rupture events generating high heat flux events well past an hour, so the 3-minute response assumption in the Analysis is highly unrealistic and not appropriate for this sensitive infrastructure site, especially with a 42-inch high MAOP pipeline. Such important issues must be taken into consideration in any prudent and realistic safety analysis concerning critical energy infrastructure, such as a nuclear power plant, where gas transmission pipeline rupture interactions, such as loss of nearby power grid or substations and resulting loss of power to IPEC, may cascade or snowball, driving the nearby IPEC facility to failure or prevent emergency access.

The Analysis has identified that in the vicinity of IPEC the 42-inch pipeline will be enhanced, or upgraded, to consist of X-70 API 5L grade pipe with a thicker wall thickness of 0.72 inches, buried to a minimum depth of four feet.<sup>14</sup> While I approve of these specific proposed safety enhancement measures to increase the 42-inch pipeline safety near IPEC, additional arguments presented in the Analysis are very misleading or inappropriate so as to cause one to underrepresent the real risks of pipeline rupture on/near IPEC, even with the enhancements. These additional arguments are far from complete in preventing a pipeline

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<sup>13</sup> Entergy letter to U.S. Nuclear Regulatory Commission, “10 C.F.R 50.59 Safety Evaluation and Supporting Analysis Prepared in Response to the Algonquin Incremental Market Natural Gas Project Indian Point Nuclear Generating Unit Nos. 2 & # Docket Nos. 5-247 and 50-286 License Nos. DPR-26 and DPR-64,” dated August 21, 2014.

<sup>14</sup> *Ibid.*, Sheets 3 to Sheet 10 of 21.

rupture. For example, the argument to install a concrete barrier over the pipeline to prevent possible damage from third parties at first blush sounds like an appropriate step. Unfortunately, Accufacts has seen too many pipeline near misses where such barriers were defeated, negating the effectiveness of such barriers to avoid serious damage to high-pressure pipelines. Accufacts has yet to see a steel pipeline that cannot be damaged by third party threat activities, especially damage that could result in delayed pipeline rupture. I have seen similar misguided arguments presented in the Analysis that steel pipelines can be made difficult to puncture, reflected in some very poor pipeline risk management approach studies and safety risk analyses trying to improperly convey the impression that pipelines cannot be made to rupture. Delayed pipeline ruptures generating massive explosions and flames are caused by damage that seldom punctures the pipe, but the pipe is weakened to where it eventually fails in time as a rupture, a large pipeline fracture that occurs in microseconds during operation.

The Analysis should more thoroughly assess the impact of pipeline rupture on IPEC facilities and operation. Such a safety hazard analysis is unique to the IPEC facilities and should thoroughly evaluate and document a process safety management approach to assess the real effect on IPEC of the proposed 42-inch, 850 MAOP, gas transmission if it should rupture. Given the seriousness of a nuclear plant loss-of-containment incident, that analysis should reflect actual gas rupture dynamics and realistic duration and impact for this specific location and system. Such an analysis should be performed and subjected to a true independent process hazard analysis that would assure any equipment loss impacted by such a large diameter pipeline rupture would not prevent the “failsafe” shutdown of IPEC, nor loss of radiation storage containment that could cascade into a radiation release in this highly populated and sensitive location. Risk management analysis should be considered seriously deficient if it dismisses low probability events with catastrophic consequences as no probability. History has repeatedly demonstrated that when it comes to complex systems, low probability events can easily become linked, substantially increasing the likelihood and risks, and may even drive a system to catastrophic failure with all too predictable disastrous consequences. A more thorough and truly independent safety analysis of the 42-inch pipeline and its possible rupture effects to IPEC are warranted and the results made public given the deficiencies and many failings of the current Analysis to instill confidence in the public.

**5) Additional precautions are warranted for the proposed southern 42-inch pipeline route near the Buchanan-Verplanck Elementary school.**

Given the various concerns raised from involved officials and citizens about the risks associated with the southern routing option of the new 42-inch proposed pipeline in close proximity to the Buchanan-Verplanck Elementary School, Accufacts will comment on pipeline related safety concerns concerning this matter. Ironically, current federal pipeline minimum safety regulations, industry codes, or best practices, do not specifically or adequately address siting issues or risks related to natural gas pipelines near schools. Pipeline safety regulations are moot concerning such important siting related issues for various reasons.

Nevertheless, there are several precautions that Accufacts recommends that would prove helpful to minimize the consequences of a 42-inch pipeline rupture if the new pipeline is routed in such a sensitive location near the school. There is no requirement that a pipeline be placed in an existing or new ROW, or even in the middle of a pipeline ROW. The placement of the pipeline right-of-way and the actual location of the pipeline within the ROW should be carefully reviewed and assured so as to minimize the removal of trees that buffer between the proposed pipeline and the school. Such large and numerous trees can reduce the impact of blast and thermal radiation to structures and individuals, buying critical time that can markedly reduce injury or loss of life associated with a possible pipeline rupture. In addition the Buchanan-Verplanck Elementary School is constructed mostly of masonry that has a much greater tolerance, or survivability, during a rupture event. Such more hardened structures also serve as excellent radiation shields to shelter individuals from blast and thermal radiation. While there is no requirement, placement of school ball and play fields where individuals are most likely to be caught unsheltered, are best situated as presently located, in the shadow of the building away from the gas transmission pipeline. Sheltering substantially increasing the likelihood of individual survival should a pipeline rupture.

The stark reality is that pipeline safety regulations and industry standards do not provide FERC with siting precautions for such sensitive locations. Integrity management (“IM”) pipeline safety regulations have attempted to instill certain additional safety precautions in such potential High Consequence Areas, or HCAs. Unfortunately, the first phase of these IM regulations, in effect for more than ten years now, have met with very mixed success as evidenced by many high profile pipeline ruptures indicating further improvements in IM regulation are warranted.<sup>15</sup>

## Conclusion

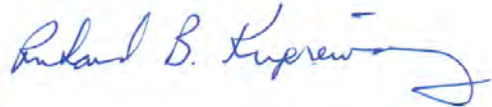
It should be clear, from a review of the Exhibits and the above discussions, that the attempt to replace segments of the 26-inch pipeline segment with a 42-inch pipeline across Cortlandt are not in sync with the claimed increased gas demands identified in the current AIM FERC filing and subsequent DEIS. The operator appears to be positioning for further expansions on the Algonquin system and there are still serious bottlenecks on the looped system between the Stony Point and Southeast Compressor Stations that should have been included with this FERC application. The operator appears to be attempting to utilize horsepower compressor additions that can be permitted more quickly than pipe installations, in an attempt to overcome pipeline bottleneck inefficiencies in remaining segments spanning New York State.

Accufacts cannot overstress the importance of performing a full and complete process hazard safety analysis, independently demonstrating, especially to the public, that there will be no interplay between a possible gas transmission pipeline rupture and the IPEC facilities to failsafe shutdown or cause a loss of radiation containment in such a sensitive and highly populated area

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<sup>15</sup> Sites where significant numbers of people can gather near a pipeline, such as churches and schools, fall under the definition of High Consequence Areas, meriting additional pipeline safety integrity management precautions as per Subpart O of 49CFR§192 for gas transmission pipelines.

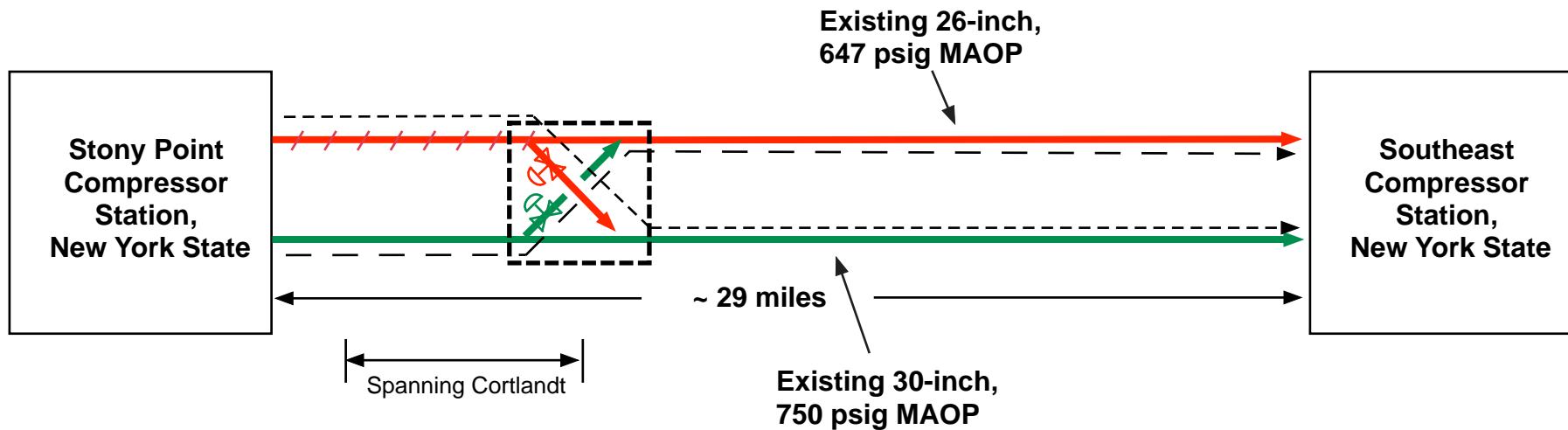
of the country. A proper and thorough hazard review and analysis may suggest another 42-inch route is warranted to assure the safety of IPEC from this gas transmission pipeline infrastructure. While Accufacts can appreciate attempts to keep certain information of such an important safety analysis somewhat secret, much more detailed effort is needed to assure the public that prudent and complete safety analysis efforts have been performed in choosing possible pipeline options in this location.

A handwritten signature in blue ink, reading "Richard B. Kuprewicz". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard B. Kuprewicz  
President,  
Accufacts Inc

# Exhibit 1

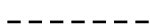
## Simplified Schematic - Algonquin Gas Transmission Pipelines Stony Pt to Southeast Compressor Stations Looped Segment Pre & Post AIM Project Proposal



26-inch 647 psig MAOP replaced with 42-inch, 850 psig MAOP



= New installation of pressure reducing/letdown valves (  ) and interconnections

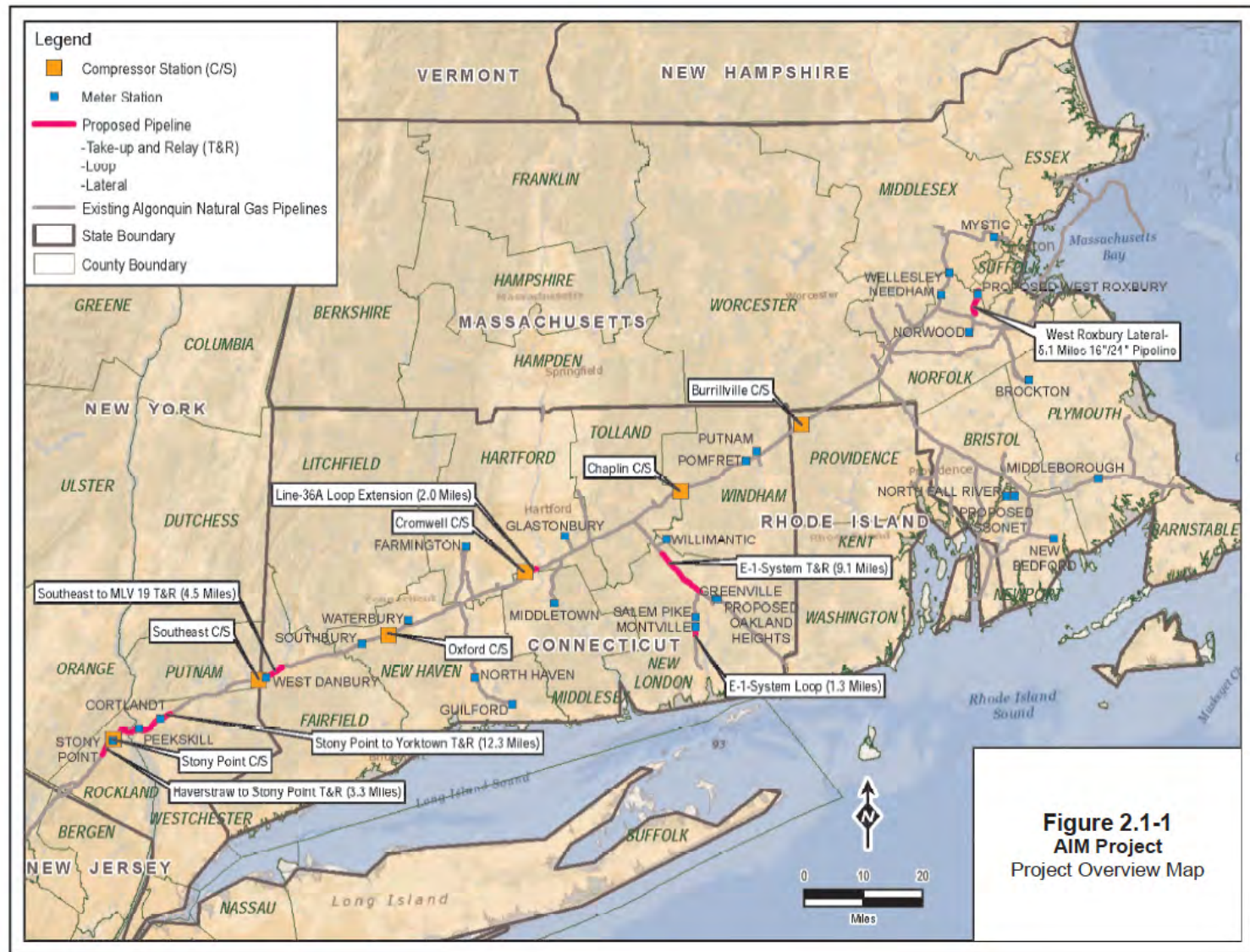


= Larger Loop gas flow after AIM



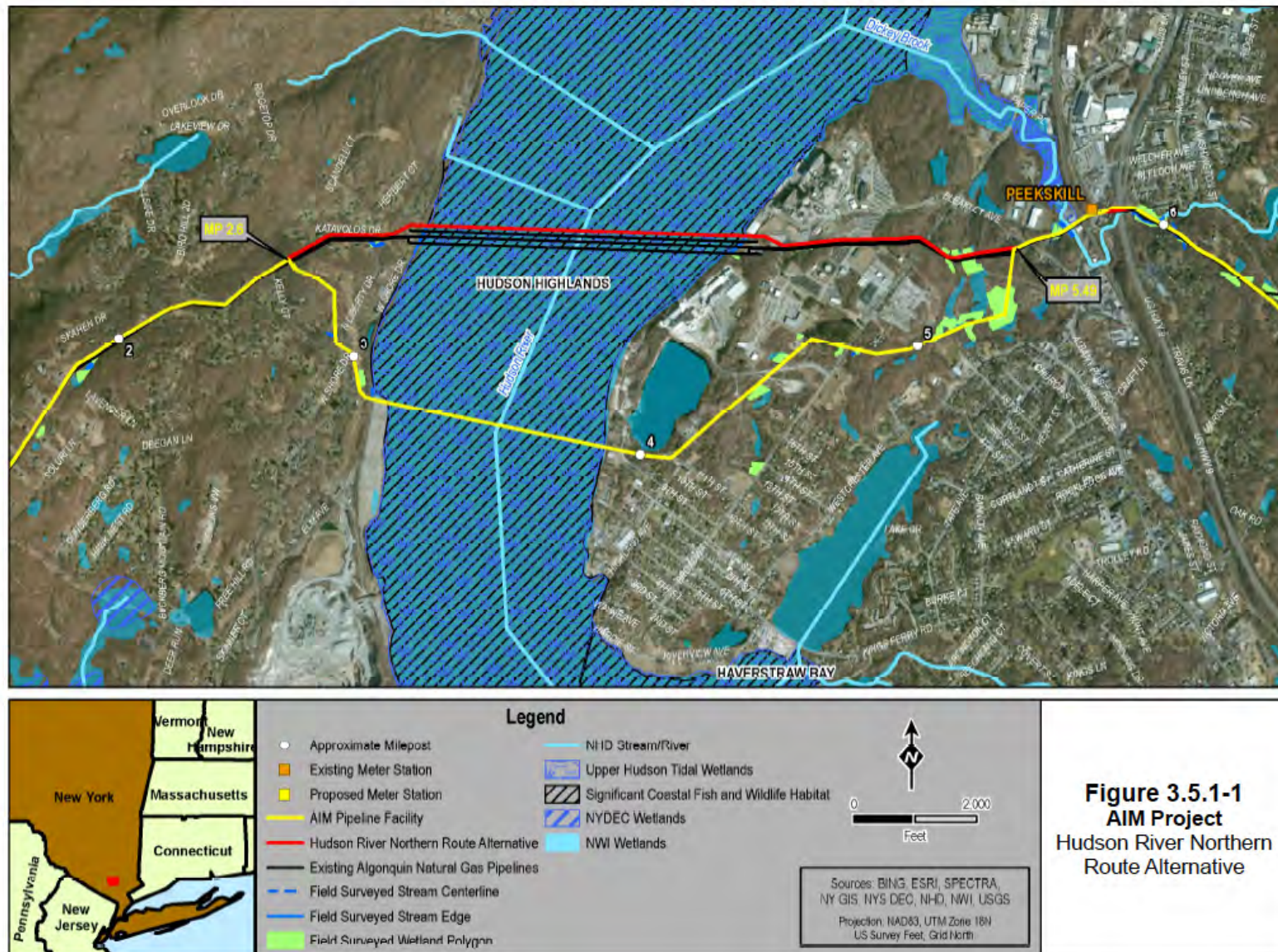
= Smaller Loop gas flow after AIM

**Exhibit 2 – AIM Project Overview Map from DEIS Showing General Location of Replacement of 26-inch with 42-Inch Pipeline Across Cortland, NY**



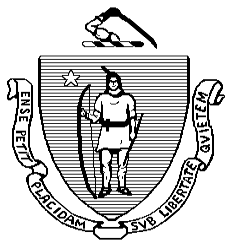


## Exhibit 3 – Algonquin Pipeline Hudson River Crossings, Existing and Proposed from AIM DEIS



Document Content(s)

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Public 2014.11.3 Accufacts Report with Public Exhibits.PDF.....	2-15



**THE COMMONWEALTH OF MASSACHUSETTS  
ENERGY FACILITIES SITING BOARD**

ONE SOUTH STATION  
BOSTON, MA 02110  
(617) 305-3525

DEVAL L. PATRICK  
GOVERNOR

November 24, 2014

Kimberly D. Bose, Secretary  
Federal Regulatory Energy Commission  
888 First Street, N.E.  
Washington, DC 20426

Re: Algonquin Gas Transmission, LLC, Docket No. CP14-96-000

Dear Ms. Bose:

On September 29, 2014, the Massachusetts Energy Facilities Siting Board (the "Siting Board" or "Board") submitted comments to FERC regarding the Draft Environmental Impact Statement ("DEIR") filed in this case. Since that time, additional residents have brought their concerns to the Board's attention. Consequently, the Siting Board hereby submits this letter and its enclosures as a supplemental comment letter on the Algonquin Incremental Project ("AIM"). This letter and its enclosures do not primarily address the DEIR. Rather, this letter and its enclosures address the AIM project as a whole.

On or about October 8, 2014, Ms. Rickie Harvey, a resident of West Roxbury, Massachusetts, acting with a group of residents, West Roxbury Saves Energy ("WRSE"), propounded written questions to the Algonquin regarding AIM. As you may be aware, the AIM project involves locating natural gas pipeline in West Roxbury, a densely-populated residential section of Boston. While Algonquin did respond in writing to these questions, WRSE and Ms. Harvey are dissatisfied with the responses. On November 16, 2014, they sent an email to Algonquin's local counsel, Jon Bonsall, Esq. of Keegan Werlin LLP, articulating the specific faults they allege in the responses. A copy of the email was sent to me last week.

Attached is a document that I have created using the written correspondence exchanged by the parties. The enclosed document contains: the questions propounded to Algonquin by Ms. Harvey and WRSE; Algonquin's responses to those questions; and Ms. Harvey's criticisms of those responses. The various parts of these documents have been cut and pasted in order to group the questions, answers, and criticisms by subject matter.

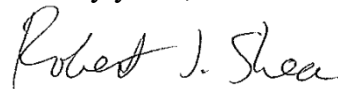
Please note, the questions propounded by Ms. Harvey and WRSE to Algonquin are printed in bold. The Company's response is printed in regular, black typeface. Ms. Harvey's criticisms of the responses follow those responses. These criticisms are printed in blue. The

criticisms are all taken from the November 16, 2014 email. The text from that email that addresses an overall dissatisfaction is printed at the beginning of the enclosed document, also in blue. Ms. Harvey's closing comments are printed, in blue, at the end of the document.

You will note that the questions propounded to Algonquin are grouped together and responded to as a group. It was Algonquin that so arranged the questions and responses. I have kept this arrangement in the enclosed document to avoid confusion.

We hope that this letter and the enclosed document are helpful to FERC. Thank you for accepting this letter and the enclosed document as supplements to the Board's earlier comments.

Sincerely yours,



Robert J. Shea  
Attorney, Massachusetts Energy  
Facilities Siting Board

Enclosure

cc: Ms. Maggie Suter (w/enclosure, by email only)  
Jon N. Bonsall, Esq. (w/enclosure, by email only)  
Ms. Rickie Harvey (w/enclosure, by email only)

## **THE EXCHANGE OF CORRESPONDENCE BETWEEN WEST ROXBURY SAVES ENERGY AND ALGONQUIN GAS TRANSMISSION LLC, ARRANGED BY SUBJECT MATTER.**

Text from Ms. Harvey's email to Jon Bonsall, Esq. dated November 16, 2014

Mr. Bonsall,

Thank you for forwarding Spectra/Algonquin's responses to the questions from our Community Meeting on Oct. 8 that you did not attend. It was a disappointment that multiple questions were grouped together and then answered that way. They were individual questions from individuals in the community and deserved individual answers. While this may have helped Spectra organize the questions, it also made it easy to fail to provide a great deal of specific information that we requested. If Spectra either cannot or will not provide the specific answers to our questions, we should be told this.

I forwarded Spectra's responses to the community, and following are reactions and comments. Please also see, at the conclusion, a question and a comment about Spectra's recent filings on FERC's website in response to FERC's request for more information.

[Editor's note: The reactions and comments by Ms. Harvey to the Algonquin responses are printed in blue.]

### **I. QUESTIONS 4-7, 13 AND 16**

- A. Questions Propounded to Algonquin by Ms. Harvey and WRSE. These questions were grouped together by Algonquin. The "Safety" headline was also supplied by Algonquin)

### **Safety**

**4. What safety precautions will be taken to avoid an explosion at any point in the line? 5. What activities and events are likely to cause an explosion along the line or at the M&R Station? What is Spectra doing to prevent such events from occurring? 6. Knowing that promising with 100% certainty that no event will occur that results in a major explosion is not possible, what percent are you able to promise? What is your SLO (service level objective) for safety? 7. What kind of pressure can the pipes withstand before they are compromised and at risk for an explosion or other catastrophe? 13. On page 5-14 of the DEIS the mention of a "slight increase in risk to the nearby public" of the new pipeline is stated. What are these "slight" risks? 16. Describe what occurs when a 750 psi pipe has an explosion.**

- B. Algonquin's Response

- General Pipeline Safety Information

Since pipeline safety is a concern raised in many of these questions, the following is information about interstate natural gas transmission pipelines and how they are safely designed, constructed, operated and maintained. This includes the pipeline system operated by Algonquin Gas Transmission, LLC (“Algonquin”). It is also important to note that the Draft Environmental Impact Statement (the “DEIS”) which the Federal Energy Regulatory Commission (“FERC”) issued on August 6<sup>th</sup> concluded that Algonquin’s implementation of the safety measures which are reflected in its filing and reviewed within the DEIS would ensure public safety and the integrity of its proposed facilities. FERC also noted that Algonquin’s facilities will be designed, constructed, operated and maintained in accordance with or to exceed the applicable federal regulations which are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Accordingly, FERC determined that by designing its project in accordance with the applicable standards, Algonquin’s West Roxbury Lateral Project would not result in significant increased public safety risk. FERC’s DEIS also noted that its regulations require that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facilities for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. FERC also stated that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. Please also refer to the copy of Resource Report 11 concerning reliability and safety which accompanied Algonquin’s FERC application and which is attached to these responses.

The pipeline is designed, constructed and operated to last virtually forever with the proper ongoing maintenance practices. Natural gas transmission pipelines have been operating safely in New England for over 60 years.

The pipeline is built of high strength carbon steel that is coated with a corrosion resistant, non-conductive, inert material with high quality control during manufacturing. The pipe is coated with corrosion resistance coatings. During construction, each joint of pipeline is welded and each weld is x-rayed to verify its integrity. Additionally, the pipeline is hydrostatically tested at high pressure before being placed into service to ensure its structural integrity prior to being placed into service. During hydrostatic testing, the pipeline is filled with water and pressurized to at least 150 percent of the maximum allowable operating pressure. That pressure is held for a minimum of 8 hours to confirm the integrity of the pipeline. The pipeline is also cathodically protected to protect it from the effects of corrosion.

The pipeline will consist of high strength Grade X-52 steel with welded connections. The pipe will be installed within an excavation and be enveloped in an engineered backfill (e.g., compacted sand or cementitious fill (a.k.a., flowable fill)) extending a minimum of 8 inches below the pipe and a minimum of 6 inches on both sides and the top of the pipe. The engineered backfill is designed to support the pipe evenly, and protect the pipe’s corrosion-protection coating.

Once the pipeline is installed at least three feet beneath the surface and the surface is restored to its pre-existing contours, Algonquin installs above-ground or surface markers to indicate the location of the buried pipeline. These markers are placed in line-of-sight intervals as the buried pipeline crosses private and public property; they are also installed at each and every road crossing. Markers are designed to enhance public safety and alert anyone planning any



excavation activities of the pipeline's presence in the area. The markers contain a decal which indicates Algonquin's name and the telephone number for assistance.

The piping and associated facilities are also required to undergo quality control and testing during manufacturing and construction. Algonquin's quality assurance/quality control includes having its inspectors at the manufacturing facilities and on-site during all welding, coating, and backfill operations. All welds for the pipeline are required to be tested (non-destructively) by a third-party radiographic inspection company.

An important key to public safety is leak prevention and detection. Algonquin personnel regularly perform visual inspections of its pipeline to identify potential problems. These inspections are done on foot, by vehicle and air. Aerial inspections of the entire pipeline route are done on a regular basis. The rights-of-way are routinely viewed by vehicles at road crossings. An on-the-ground inspection is conducted annually by walking the entire pipeline route.

Government statistics cite "outside forces" as the primary cause for reportable incidents on natural gas pipelines, with "human error" in equipment usage comprising 75 percent of these events. Most of these cases involve excavating without first contacting a gas company to mark the location of the pipeline. The reference in the DEIS issued by the FERC in August to a slight increase in risk primarily involves third party damage. For this reason, Algonquin adheres to strict guidelines regulating activities within close vicinity of its facilities. For the protection of the public and the pipeline, Algonquin must approve any physical work in such vicinity. Algonquin supports third party awareness by promoting pipeline safety and public awareness. This is accomplished by community liaison meetings and mailings throughout the areas where the pipeline is located.

Algonquin is an active member and advocate of the "Dig Safe" program in Massachusetts. Through Dig Safe, Algonquin is informed of planned excavations, which allows it to monitor activities around the right-of-way to protect the pipeline. Before any type of excavation work may be done within close vicinity of its facilities, Dig Safe and Algonquin must be contacted. Algonquin will then mark the location of its facilities and will require that an inspector be present during the excavation to monitor the work. In most instances, Algonquin provides that inspection at no cost to the contractor or landowner.

Once the pipeline is in-service, Algonquin's Gas Control Center electronically monitors the operations of the pipeline. The Gas Control Center is staffed 24 hours a day, 365 days a year and uses a state of the art computerized gas monitoring system ("SCADA System") to read pressures on a continuous basis along the system every 60 seconds or less.

Safety is Algonquin's primary focus. Steel pipelines are designed, constructed and operated to avoid catastrophic events. In the course of construction and operation of the pipeline, Algonquin works closely with local communities and public safety officials through an ongoing liaison program. In the unlikely event of an emergency, Algonquin operating personnel who are headquartered in Westwood coordinate their response with the local public safety officials as noted within FERC's DEIS.



Company personnel are responsible for the pipeline in the event of an emergency. Local public safety officials (fire, police) would be responsible for protecting the public during an emergency situation and make the determination of the necessary emergency steps to take, notifying or evacuating residents if necessary. Company personnel meet with local safety officials on a regular basis in conjunction with its liaison program to ensure that the public's safety is maintained and its response activities are coordinated.

C. Ms. Harvey's Criticisms of Algonquin's Response

"Safety"

**In the first section** (where you have grouped together our questions 4-7, 13, and 16), you have addressed few of the specifics asked for in these questions: you do not indicate what activities and events are likely to cause an explosion along the line or at the M&R Station; you do not indicate what specific percentage of certainty you have that no event will occur that results in a major explosion; you do not tell us your SLO for safety; you do not tell us what kind of pressure the pipes can withstand before they are compromised; you do not tell us what the "slight" risks are that are mentioned in the DEIS (other than "third-party damage"); and you do not describe what occurs when a 750psi pipe has an explosion.

II. QUESTIONS 9, 14, 23, AND 24

A. Questions Propounded to Algonquin by Ms. Harvey and WRSE (Grouped Together by Algonquin)

**9. Where have you successfully built and maintained a pipeline of similar length and pressure in a similar environment (M&R Station so close or closer to an active quarry that is also in such a densely settled neighborhood)? Where else is there an active quarry in the middle of a major city that also has one of your 750 psi pipelines running through it? 14. Is it possible to relocate the M&R Station to a place that is not in proximity to the quarry? 23. Why did Spectra not consider alternative locations for this 5-mile spur that did not include a densely populated residential area and an active quarry across from the M&R Station? 24. One speaker stated that his home will be just a few hundred feet from the proposed M&R Station. Please ask the CEO of Spectra if he would want his children living in that same proximity to the M&R Station.**

B. Algonquin's Response

**West Roxbury Crushed Stone Quarry**

The issue of safety was initially raised by public officials, residents and local community groups in the fall of 2013. The core issue is whether Algonquin's facilities can operate safely in close proximity to an active quarry. In order to address those concerns, Algonquin commissioned

a detailed engineering study by GZA GeoEnvironmental, Inc. (“GZA”) to evaluate the possible impacts from the West Roxbury Crushed Stone Quarry’s (the “Quarry”) current and potential future blasting operations on the construction and operation of the West Roxbury Lateral pipeline and the meter and regulator station. The GZA study was completed and filed with FERC on March 31, 2014 for its review and consideration. Critically, the DEIS issued by FERC provides an in-depth analysis of the GZA study and the DEIS did not fault the conclusions within the study which are summarized below.

The GZA study took an extremely conservative approach by assuming that the Quarry was allowed to blast within five (5) feet of the sidewalk along Grove Street in West Roxbury. Such a location would place the Quarry’s blasting at the closest possible point to the facilities associated with Algonquin’s West Roxbury Lateral Project. In preparing its report as submitted to FERC, GZA concluded as follows:

- The current or future blasting operations at the Quarry will not affect the safe operation and integrity of Algonquin’s facilities.
- Despite the conservative approach followed concerning the proximity of the Quarry’s blasting, ground vibrations from future blasting at the Quarry will not damage the proposed pipeline and the pipeline had a minimum factor of safety of ten (10) to twenty (20) times its design strength.
- The blasting at the Quarry will not be disruptive or damaging to the meter and regulator station at the intersection of Grove and Centre Streets due in part to the station’s design and because the meter station will be located even further away from the Quarry than the pipeline, with the impact from blasting dissipating over distance.
- The likelihood that a piece of fly-rock from the Quarry might hit and damage the meter and regulator station is calculated to be in the range of 10,000,000 to 1, and the possibility that such a direct hit might actually cause a release of gas in any amount is even less likely.

Subsequent to the preparation of the GZA report which assumed that blasting occurred within five feet of the sidewalk, State Senator Michael Rush successfully passed legislation which restricts the ability of the Quarry to blast within five hundred (500) feet of Algonquin’s facilities absent state approval and a specific finding by the state that such blasting is completely safe. It is also important to recognize that blasting at the Quarry is performed under a permit issued by the Fire Department for the City of Boston which, as FERC’s DEIS notes, specifies a limit on the allowable blast-induced vibration magnitude at any abutting property of 1.0 inch per second.

Algonquin would also note that two existing gas pipelines and a waterline have been operating within Grove and Centre Streets, adjacent to the Quarry, for several decades with no appreciable effect on the community’s safety or the Quarry’s operation.

#### C. Ms. Harvey’s Criticism of Algonquin’s Response

**In the second section** (where you have grouped together our questions 9, 14, 23, and 24), again you fail to address the actual questions asked: you do not tell us where you have successfully built and maintained a pipeline similar to the WR Lateral and an M&R Station in this densely a populated area and adjacent to a blasting quarry; you do not answer yes or no to the question of

whether it is possible to relocate the M&R Station to a place not in proximity to the West Roxbury quarry; you do not tell us the Spectra CEO's answer to whether he would want his children living in this kind of proximity to the M&R Station.

### III. QUESTIONS 1 AND 2

#### A. Questions Propounded to Algonquin by Ms. Harvey and WRSE. (These questions were grouped together by Algonquin)

**1. If an explosion happened along any point in the five-mile pipeline, what would the blast radius be? How many residents and homes would be affected by the blast and the ensuing fires? 2. If an explosion happened at the M&R Station, what would the blast radius be? How many residents and homes would be affected by the blast and the ensuing fires?**

#### B. Algonquin's Response

Safety is Algonquin's top priority in the construction, operation and maintenance of its facilities. According to National Transportation Safety Board statistics, the interstate natural gas pipeline system is the safest energy delivery system in the nation. The pipeline and the meter and regulator station are designed, constructed and operated to meet or exceed the safety requirements exclusively governed by the U.S. Department of Transportation ("U.S. DOT").

It is important to note that in the Draft Environmental Impact Statement issued on August 6<sup>th</sup>, the FERC concluded that Algonquin's implementation of the safety measures which are reflected in its filing would ensure public safety and the integrity of its proposed facilities.

The U.S. DOT is responsible for establishing the requirements and oversight of the operation and maintenance of interstate natural gas pipelines. In that capacity, regional U.S. DOT representatives perform periodic inspections of Algonquin as the pipeline operator by reviewing its records, operating and maintenance procedures and facilities to ensure that Algonquin's operating practices meet or exceed U.S. DOT regulations.

A pipeline rupture or similar occurrence at the meter and regulator station is highly unlikely. In fact, the U.S. DOT design and operating criteria are developed specifically to avoid those types of events. Algonquin and the pipeline industry in general make every effort to avoid and prevent such occurrences. Algonquin works with local authorities and the Dig Safe Program to educate third parties about the necessary communications when a contractor needs to perform construction on and around the pipeline right-of-way or in the general vicinity of the meter and regulator station. Additional detail concerning the strong focus which Algonquin brings to the construction, operation and maintenance of its facilities was included within Resource Report 11 as filed with Algonquin's application at the FERC; a copy of Resource Report 11 is included as an attachment to these responses.

Algonquin has safely operated pipelines in Massachusetts and the region for over sixty years. The safe operation of the Algonquin pipeline system is due to procedures and specifications that incorporate multiple layers of safety into the design, materials procurement, construction and

operation as described more fully in the *General Pipeline Safety Information* section included with these responses.

C. Ms. Harvey's Criticisms of Algonquin's Response

**In the third section** (where you have grouped together our questions 1 and 2), you have not answered what the blast radius would be in either situation or told us how many residents and homes would be effected. (We are aware that the accompanying PDF you sent provides a formula for a blast radius calculation. Using 750psi and a 16-inch pipe, we came up with a radius of slightly over 300 feet. However, given that Spectra is expert at this, why wouldn't you just provide us with the radius information—or at this point confirm our calculation—as well as tell us the number of residents/homes that would be affected?)

IV. QUESTION 11

A. Question Propounded to Algonquin by Ms. Harvey and WRSE

**11.What materials will be used for the M&R Station? Are they explosion-proof?**

B. Algonquin's Response

The meter and regulator ("M&R") Station will consist of a metering building, two exterior gas heaters, a regulating building, and above-ground and underground gas pipelines. The M&R Station site will be enclosed in a security fence. The two buildings will be engineered, single-level structures with minimum 4-inch thick reinforced concrete walls and a 4- to 6-inch thick reinforced concrete roof. The exterior above-ground structures, pipes, and supports will be steel construction. The buildings and heaters will be supported on concrete foundations. All sensitive M&R Station piping, instruments and components will be located inside of the reinforced concrete buildings.

C. Ms. Harvey's Follow-Up Question

**In the fourth section** (question 11), we have a follow-up question to your answers: at what point will the community be able to see what the M&R Station will look like and will there be a community process to review the proposed station? You have made representations that the M&R Station will use brick and be screened, but we have not seen any documentation in regard to these statements.

V. QUESTIONS 3, 12, AND 20

A. Questions Propounded to Algonquin by Ms. Harvey and WRSE (Grouped Together by Algonquin)

**3. In the event of an emergency, how long would it take Spectra and/or National Grid to turn off the gas to the line and to the M&R Station to avoid further damage and loss of life? (It took PG&E approximately 1.5 to 2 hours in the San Bruno blast.) 12. Where will the shut-off valves for the M&R Station be located? 20. An elementary school is located less than a mile away from the proposed high-pressure pipeline. Explain what precautions will be taken to protect these children in the event of a leak or explosion at the pipeline.**

## B. Algonquin's Response

Remotely operated valves are installed along the pipeline to control and shut off the flow of gas. The spacing of these valves is regulated by the U.S. Department of Transportation ("U.S. DOT"). As required by U.S. DOT standards, mainline valve sites are located at specified intervals depending upon the population density. Algonquin plans to install mainline valves at the beginning of the route in Westwood and at the M&R Station in West Roxbury. A typical valve site is comprised of an area that is enclosed by a fence measuring approximately 50 feet by 50 feet surrounding an aboveground valve and piping. In addition, an additional shut-off valve will be located at the interconnection between Algonquin's pipeline and Grid's facilities in West Roxbury.

With the remote operating capability, our Gas Control Center can immediately begin a safe shutdown and isolation of a section of pipeline in the event of an emergency. The remotely operated valves close within 60 to 90 seconds.

As noted elsewhere, company personnel are responsible for the pipeline in the event of an emergency. Local public safety officials (i.e., fire, police) would be responsible for protecting the public, including nearby schools, during any emergency situation. Company personnel meet with local safety officials on a regular basis in conjunction with its liaison program to ensure that the public's safety is maintained and response activities are coordinated.

As noted previously, the DEIS which FERC issued on August 6<sup>th</sup> concluded that Algonquin's implementation of the safety measures which are reflected in its filing would ensure public safety and the integrity of its proposed facilities.

## C. Ms. Harvey's Criticisms of Algonquin's Response

**In the fifth section** (where you have grouped together our questions 3, 12, and 20), you have not answered the question as to what precautions will be taken to protect the children in the nearby school in the event of a leak or explosion, except with the usual generalities. In addition, you state that "Algonquin plans to install mainline valves at the beginning of the route in Westwood and at the M&R station in West Roxbury." The literal meaning and implication of this statement appears to be that the only mainline valving along the entire WR Lateral will be at the beginning and end of the lateral. If anything happens within the entire stretch of the WR Lateral that requires gas shut off, it would occur (apparently automatically) back in Westwood. We would ask you at this time to rectify this statement with subsequent statements that a section of pipe can be isolated if necessary. For example, in the section on Air Emissions (page 18), you claim that "all gas releases for maintenance operations is minimized to small sections of pipe." Can you follow up with an explanation of how both these statements can be true? Perhaps there are alternative mechanical mechanisms for accomplishing this, rather than mainline valving?

VI. QUESTIONS 21, 25, 26, 27, 28, 29

- A. Questions Propounded to Algonquin by Ms. Harvey and WRSE. (These questions were grouped together by Algonquin)

### **Project Need**

**21. Has there been a cost-benefit analysis done on the supply of gas through a new line vs. fixing the current leaks in the system? 25. In light of all the leaks in the existing gas pipes, can the added pressure from the high-pressure line be handled safely? 26. Is this gas going into a liquefied station? Can Spectra promise us it will not be LNG? 27. Is the sole purpose of the West Roxbury Lateral at full capacity to deliver 30,000 decatherms to National Grid or is Spectra anticipating other uses? 28. Is there any reason Spectra could not bring the extra gas in through a lower pressure line? 29. How many communities will be served by the 750 psi line coming into West Roxbury?**

- B. Algonquin's Response

The West Roxbury Lateral Project (the "Project") is being developed by Algonquin in order to provide additional pipeline capacity to National Grid ("Grid") so that Grid can meet its immediate and planned load growth demands within the West Roxbury area and the City of Boston. In fact, the agreement between Algonquin and Grid which forms the basis for Algonquin's Project was subject to review and approval by the Massachusetts Department of Public Utilities (the "Department"). Based on a filing made by Grid with the Department in September 2013, the Department found that the contract between Algonquin and Grid was in the public interest and was necessary to enable Grid to meet its forecasted demand for its customers in the West Roxbury/Boston area. Both the Attorney General and the Massachusetts Department of Energy Resources had recommended approval of the contract between Algonquin and Grid as necessary for Grid to be able to meet its forecasted demand. In its filing with the Department, Grid noted that Algonquin's Project would be a dedicated lateral to serve Grid's distribution system. Grid maintained that the primary reasons why the Project would be beneficial and was needed for Grid's distribution system and its customers was to improve system reliability, to facilitate upgrades to the local distribution system in West Roxbury, and to support long-term growth. Specifically, Grid noted the following:

- Ninety-five percent of the homes and businesses in West Roxbury use natural gas and Algonquin's West Roxbury Lateral will provide significant enhancements to the reliability of supply into this portion of the Grid service territory.
- Its gas system could be modernized and replaced with higher pressure (60 psig) plastic gas mains, which would be more efficient and cost effective than replacing the existing low pressure system. That modernization program has already been initiated by Grid in anticipation of the additional supply to be provided by the Project.
- New gas customers are driving the need for additional supply even with ongoing energy efficiency gains. For example, Grid estimates that there could be nearly 146,000 potential new customers in the Boston area that could be supported by the completion of Algonquin's Project, with a corresponding benefit for the entire City due to cleaner air which will result from the lowering of greenhouse gas emissions.

The West Roxbury Lateral also helps Grid resolve gas distribution system reliability issues in West Roxbury. For example, Grid has estimated that 15 percent of peak day supplies are delivered from its Commercial Point facility in Dorchester. Absent the West Roxbury Lateral being in-service, an outage at that facility would result in wide spread system outages. Similarly, Grid has noted that 25 percent of its peak day supplies are delivered into Boston on Algonquin's J-lateral. In the event of an outage on the J-lateral on a cold day (i.e., 15 degrees), Grid has estimated that tens of thousands of its customers would lose service without the West Roxbury Lateral.

There is no intent to use the gas supplied through the Project for LNG production or export. The DEIS issued by FERC on August 6<sup>th</sup> addressed this issue and concluded that the Project is not designed for the export of natural gas.

C. Ms. Harvey's Criticisms of Algonquin's Response

**"Project Need"** (where you have grouped together our questions 21 and 25-29), you do not answer the question about a cost-benefit analysis; you do not answer the question in regard to the 30,000 decatherms; you do not answer whether a low-pressure gas line could accomplish the same goal for National Grid.

VII. QUESTIONS 14, 19, AND 23

A. Questions Propounded to Algonquin by Ms. Harvey and WRSE. (These questions were grouped together by Algonquin)

**14. Is it possible to relocate the M&R Station to a place that is not in proximity to the quarry? 19. Explain why this route for the West Roxbury Lateral is the best route available for this incoming pipeline. 23. Why did Spectra not consider alternative locations for this 5-mile spur that did not include a densely populated residential area and an active quarry across from the M&R Station?**



## B. Algonquin's Response

National Grid ("Grid") requested a new delivery point located in the West Roxbury section of the City of Boston to connect with, enhance and reinforce system reliability during outage situations and support long-term growth in the Boston region. The site for the new delivery point cannot be reached by the existing Algonquin pipeline system. As a result, it is necessary to install approximately 4.9 miles of new lateral pipeline and a new meter and regulator ("M&R") Station to provide Grid with the service it has requested.

Algonquin initially identified another route for the West Roxbury Lateral which is identified in its FERC filing as the West Roxbury Lateral Alternative. The West Roxbury Lateral Alternative route deviated from the currently proposed route for the West Roxbury Lateral on Washington Street in the Town of Dedham. The alternate route followed Incinerator Road off of Washington Street and existing parking lots and driveways for a variety of commercial properties for approximately 0.7 miles before paralleling Providence Highway and crossing into West Roxbury. The alternative route then went cross country and intersected with Belle Avenue. At this point, the route followed various residential roadways including Belle Avenue, Baker Street, Spring Street and Alaric Street before intersecting with the proposed alignment.

Significant concern was raised at that time about the alternative route primarily because of its proximity to residential structures and the surrounding neighborhoods, particularly in the vicinity of Belle Avenue. For example, the alternative alignment would have crossed through the backyards of several residential homes, impacted a number of residential streets, and caused significant disruption to the surrounding neighborhood. Construction in these areas would also have required complete closure of these residential streets. In addition, if this alternative route were to be used, the required M&R Station would have to be located on private property at the intersection of Centre Street and Alaric Street, which does not present any favorable land options for locating the M&R Station. For example, one option would have required the purchase and demolition of a residential property at the corner of Centre and Alaric Streets.

In addition, after detailed engineering review, it was determined that finding a location for the proposed M&R Station along the West Roxbury Lateral Alternative would have resulted in greater impacts due to the presence of residential homes, school athletic facilities and traffic congestion as compared to the proposed M&R Station site at the intersection of Grove and Centre Streets on the preferred route. The proposed M&R Station site is located at the intersection of Centre Street and Grove Street on a 4.11-acre undeveloped property. This provides a more feasible option for siting the new M&R Station in West Roxbury. In addition, this site was superior in terms of allowing the Project to help screen the M&R Station from view due to the existing growth on that parcel.

A detailed analysis of the West Roxbury Lateral Alternative Route was performed by the Federal Energy Regulatory Commission in conjunction with its preparation of its DEIS. Based on that review, the DEIS concluded that the alternative route was not preferable to or otherwise provided a significant advantage over the proposed route. Moreover, the DEIS also discussed the proposed location of the M&R Station in West Roxbury and compared it with the possible location at the intersection of Centre and Alaric Streets. The DEIS determined that the alternative location was not technically feasible or environmentally preferable when compared to the proposed site off of Grove

Street. The DEIS also concluded that no other viable alternative sites had been identified for the M&R Station in West Roxbury.

In recent weeks, the Project has also been asked about the possibility of Algonquin's West Roxbury Lateral Project tying-in to the Grid system by traveling up the VFW Parkway and connecting on Rivermoor Street. Basically, a tie-in at Rivermoor Street would not support Grid's intermediate pressure system as the pipe infrastructure at Rivermoor is insufficient to provide the needed takeaway capacity or pressure support which Grid requires in order to serve its customers. In fact, an additional pipeline would still need to be installed from Rivermoor Street to the current interconnection with Grid near Temple and Centre Streets in order to achieve the needed benefits. Thus, instead of one pipeline, the project would have two pipelines running through West Roxbury, and the overall length in Boston would increase by close to two miles. In contrast, the West Roxbury Lateral as presently configured meets Grid's requirements by interconnecting to Grid at Spring and Centre Streets.

In summary, the DEIS issued by FERC conducted an exhaustive review of alternative routes and concluded that none offered significant environmental advantages over the alignment proposed by the Project.

#### C. Ms. Harvey's Criticisms of Algonquin's Response

"Alternatives Discussion" (where you have grouped together our questions 14, 19, and 23): while your answer may be technically factual, it is our feeling that you continue to miss the larger point about alternative locations, that is, that you have not considered alternatives that are entirely different, not just alternatives that simply constitute variations on the one locational approach. Your claim that what has occurred to date has been an "exhaustive review of alternative routes" is untenable absent fuller discussion of alternatives intended to meet National Grid's request for additional capacity in southwest Boston.

#### VIII. OTHER CRITICISMS BY MS.HARVEY

In addition to the follow up above, we are requesting information about a statement Spectra makes in its recent filings on FERC's website in response to additional information requested by FERC on Oct. 22. In the section with respect to the West Roxbury community, Spectra states: "Numerous discussions with Boston Mayor Martin Walsh's office as well as the Boston City Council, including City Councilors Matt O'Malley and Michelle Wu, occurred over the summer and into the fall. The discussions focused on the proposed route through West Roxbury and issues related to the location of the Project's facilities in the vicinity of the West Roxbury Crushed Stone Quarry." We ask that you supply us with the dates of these "numerous discussions" with the City Council (including Councilors O'Malley and Wu) and the mayor that you say took place, according to the filing, over the summer and fall of 2014.

Finally, I have to take issue with the characterization by Spectra in these recent filings that Algonquin was never "officially invited to the meeting [on October 8] by WRSE." Mr. Bonsall, we sat in the same room together, and you know that I personally requested of you twice during that meeting (at the beginning and at the end) that Spectra send representatives to the Oct. 8 Community Meeting. You are also well aware that, on the community's and WRSE's behalf,

multiple requests were made by Congressman Lynch's office and also the mayor's office that Spectra attend the Community Meeting on Oct. 8.

We will look forward to receiving responses to the question immediately above in regard to the meeting dates and, we hope this time, specific answers to our original specific questions, as opposed to more general statements and reiterations of material already available on the FERC website and in the GZA report, with which we are familiar.

Document Content(s)

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Supplemental Comments to FERC.PDF.....3-15

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

In Reply Refer To:  
OEP/DPC/CB-2  
Algonquin Gas Transmission,  
LLC  
Docket No. CP14-96-000  
§ 375.308(x)(3)  
December 2, 2014

Berk Donaldson  
Director, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

Re: Data Request

Dear Mr. Donaldson:

Please provide the information described in the enclosure to assist in our analysis of Algonquin Gas Transmission, LLC's (Algonquin) proposal in the above application.

File your response in accordance with the provisions of the Commission's Rules of Practice and Procedure. In particular, 18 C.F.R. § 385.2010 (Rule 2010) requires that you serve a copy of the response to each person whose name appears on the official service list for this proceeding.

**Please file a complete response within 10 business days of the date of this letter.** If certain information cannot be provided within this time frame, please indicate which items will be delayed and provide a projected filing date. Any Critical Energy Infrastructure Information should be filed as non-public and labeled "Contains Critical Energy Infrastructure Information-Do Not Release" (18 C.F.R. § 388.112), and should be filed separately from the remaining information, which should be marked "Public."

File all responses under oath (18 C.F.R. § 385.2005) by an authorized representative of Algonquin and include the name, position, and telephone number of the respondent to each item.

Docket No. CP14-96-000

- 2 -

Sincerely,

Stefanie R. Schumacher  
Project Manager  
Certificate Branch 2  
Office of Energy Projects

Docket No. CP14-96-000

- 3 -

Enclosure

cc: Public File - Docket No. CP14-96-000

All Parties

Chris Harvey  
Manager, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

Steven E. Hellman  
Associate General Counsel  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642



**Enclosure**

1. Provide both steady-state and transient models of Algonquin's pipeline system, operating under both existing and proposed conditions. Algonquin can do so by using either one of the commercially available pipeline simulation software packages, Gregg Engineering WinTran and DNV GL SynerGi Pipeline USM, currently licensed by the Commission or an in-house developed program.
2. If Algonquin does not currently utilize either of the aforementioned software programs utilized by the Commission, provide the transient data (input and output) for Algonquin's pipeline system operating under both existing and all proposed conditions for each operational scenario Algonquin utilizes in order to evaluate the operational capabilities/performance while designing for new services. For these transient models, Algonquin should provide input and output files for a minimum of three days operating at off-peak hourly and peak day hourly usage (6 percent hourly load or maximum currently used by Algonquin) for each pipeline segment examined by Algonquin to generate results necessary to evaluate the need of the proposed mainline facility augmentation. The data, submitted in tabular form in Microsoft Excel spreadsheet(s), must include the following calculated information for its pipeline system both before and after the AIM Project for each time step examined (or a maximum of  $\Delta t = 0.1$  hours).
  - a. the length, (internal) diameter and maximum allowable operating pressure of each pipe segment;
  - b. the gas velocity for each pipe segment;
  - c. the flows and pressures, including the minimum and maximum values, for each node or point of interest;
  - d. the flows and set pressures of all regulating facilities;
  - e. the flows, including the inlet and outlet pressures, for all the compressor stations;
  - f. the horsepower utilization and operating status of each unit for each compressor station; and
  - g. the compressor curves for each compressor unit used at each compressor station.
  - h. All data must be provided and filed with the Commission in electronic format.

3. As part of Algonquin's response, highlight the facilities, starting at the inlet of the Hanover Compressor Station (CS) and continuing through the outlet of the Oxford CS, that were used by Algonquin to generate the Exhibit G and G-I flow diagrams submitted in this proceeding. Discuss, in detail, how the new facilities are needed to allow Algonquin to meet its proposed delivery requirements while maintaining service to its existing shippers.

Document Content(s)

CP14-96-000 Algonquin Data Request 120214.DOC.....1-5

CP14-96

**ASSOCIATED  
PUBLIC FILE****FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, DC 20426**

December 2, 2014

**OFFICE OF THE CHAIRMAN**

The Honorable Martin J. Walsh  
Mayor  
City of Boston - Boston City Hall  
One City Hall Square  
Boston, MA 02201

Dear Mayor Walsh:

Thank you for your October 24, 2014, letter regarding Algonquin Transmission, LLC's (Algonquin) Algonquin Incremental Market Project (in Federal Energy Regulatory Commission's Docket No. CP14-96-000). Specifically, you request alternative routes and location for the proposed West Roxbury Lateral and Metering and Regulating Station, as well as additional review of the safety and health impacts associated with locating pipeline facilities in a densely residential area and near an active quarry.

The Commission staff's review of the Algonquin Incremental Market Project has included an independent review of numerous alternatives developed by stakeholders. For example, the draft environmental impact statement (EIS) for this proposal, issued on August 6, 2014, discusses and evaluates two route alternatives for portions of the West Roxbury Lateral. The draft EIS also recognizes the potential conflicts associated with the proposed facilities being located near an active quarry. Specifically, the draft EIS incorporates an analysis of the current and potential future expanded quarry blasting operations and its effects on the pipeline and aboveground meter and regulating station. Section 4.12 of the draft EIS identifies extensive safety information about the project, presenting the U.S. Department of Transportation's pipeline safety standards and how they relate to the population density around the pipeline, pipeline accident data, and the impact on public safety.

Currently, Commission staff is preparing the final EIS, which will address all the comments received during the draft EIS comment period, including those regarding alternatives, safety, and the quarry's blasting operations. When we complete the final EIS, it will be issued, noticed in the *Federal Register*, and mailed to the environmental mailing list. The Commission will consider its findings (along with the results of the staff's review of the project engineering, markets, costs, financing, and rates) before making its decision on whether or not to authorize this project.

2014-00253

J.A. - 0696

-2-

In the end, our decision on whether to authorize this project will be based on a careful review of the safety, security, and environmental issues relating to this project and will be rooted in the law, facts, and science. I hope the above information has been helpful. If I can be of any further assistance in this or any other Commission matter, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read 'Cheryl A. LaFleur', with a stylized flourish at the end.

Cheryl A. LaFleur  
Chairman

Document Content(s)

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<i>Office of Energy Projects – Division of Gas Environment and Engineering – Gas Branch 2</i>		<b>Docket No.</b> CP14-96-000
<b>Interagency Meeting</b>		
<b>Date of Meeting:</b> 10/17/2014		<b>Project:</b> Algonquin Incremental Market Project (AIM Project)
<b>Purpose:</b> Discuss the Nuclear Regulatory Commission’s (NRC) review of Entergy’s Safety Evaluation for Indian Point		
<b>Name</b>	<b>Affiliation</b>	
Maggie Suter	Federal Energy Regulatory Commission (FERC)	
Doug Pickett	NRC	
Sara Mroz	NRC	
Ben Beasley	NRC	
Sam McCarver	NRC	
Art Burritt	NRC	
Tom Setzer	NRC	
Jennifer Lee	Natural Resource Group, LLC	

### Meeting Summary:

FERC had a conference call with the NRC to discuss its review of Entergy’s site hazards analysis for the Indian Point Energy Center (IPEC) relative to Algonquin’s proposed AIM Project. NRC has received Entergy’s 50.59 submission, which included Entergy’s conclusion that the AIM Project would not present an additional safety hazard for the IPEC facility. NRC conducted an independent analysis of Entergy’s 50.59 submission, which included a site inspection and review of the IPEC site during the week of September 22, 2014. NRC also conducted an independent, confirmatory blast analysis. In the area where a postulated pipeline rupture could adversely affect structures, systems, and components important to safety, Algonquin committed to take additional mitigation measures to enhance the pipeline design and construction to further limit the already very low potential for a gas pipeline rupture. However, the NRC’s analysis did not allow any credit for these additional mitigation measures and assumed a catastrophic pipeline failure.. The review covered everything within the Security Owner Controlled Area (SOCA), which includes everything inside the outer most fenced area of the facility (including the spent fuel rods). Based on its review, the NRC came to the same conclusion that Entergy did in its 50.59 submission. Therefore, NRC finds Entergy’s 50.59 submission acceptable and has determined that no prior approval from the NRC is needed. NRC also indicated that the existing pipelines have been studied extensively, including as recently as 2008. NRC also confirmed that the use of “IPEC” to describe the facility is appropriate.



Document Content(s)

2014_10-17_Meeting Minutes NRC.DOC.....	1-1
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FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

In Reply Refer To:  
OEP/DPC/CB-2  
Algonquin Gas Transmission,  
LLC  
Docket No. CP14-96-000  
§ 375.308(x)(3)  
December 18, 2014

Berk Donaldson  
Director, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

Re: Data Request

Dear Mr. Donaldson:

Please provide the information described in the enclosure to assist in our analysis of Algonquin Gas Transmission, LLC's (Algonquin) proposal in the above application.

File your response in accordance with the provisions of the Commission's Rules of Practice and Procedure. In particular, 18 C.F.R. § 385.2010 (Rule 2010) requires that you serve a copy of the response to each person whose name appears on the official service list for this proceeding.

**Please file a complete response within 5 days of the date of this letter.** If certain information cannot be provided within this time frame, please indicate which items will be delayed and provide a projected filing date. Any Critical Energy Infrastructure Information should be filed as non-public and labeled "Contains Critical Energy Infrastructure Information-Do Not Release" (18 C.F.R. § 388.112), and should be filed separately from the remaining information, which should be marked "Public."

File all responses under oath (18 C.F.R. § 385.2005) by an authorized representative of Algonquin and include the name, position, and telephone number of the respondent to each item.

Docket No. CP14-96-000

- 2 -

Sincerely,

Stefanie R. Schumacher  
Project Manager  
Certificate Branch 2  
Office of Energy Projects

Docket No. CP14-96-000

- 3 -

Enclosure

cc: Public File - Docket No. CP14-96-000

All Parties

Chris Harvey  
Manager, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

Steven E. Hellman  
Associate General Counsel  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

**Enclosure**

1. What are Algonquin's engineering design constraints for gas velocities on its pipeline system for both existing and proposed facilities? Does Algonquin use the erosional velocity as a limitation when designing its pipeline expansions? Explain and calculate the gas flow velocities on its system under both peak draft and pack conditions.
2. Under what circumstances will Algonquin allow the gas velocity to exceed its design requirements? Explain.
3. Compare and contrast Algonquin's flow diagrams with flow schematic provided by Accufacts, Inc. (Accufacts) in Exhibit No. 1 in its November 3, 2014 report.
4. Using the calculated steady-state and transient data from Algonquin's pipeline models, compare and contrast the calculated flow velocities from Algonquin's pipeline models with Accufacts' calculated flow velocities in Exhibits 4 and 5.
5. On page 2 of 11, in its November 3rd Report, Accufacts makes three accusations:
  - (i) the new 42-inch diameter pipeline in Cortland is "...considerably oversized/overbuilt for the stated capacity increase of 342 Dth/d" for the project;<sup>1</sup>
  - (ii) "(a)ctual gas velocities...for the pre-AIM existing gas transmission pipeline spanning Cortland are within acceptable ranges, but after the AIM installation are so low that considerable future possible throughput increases can be easily accommodated for these segments"; and
  - (iii) "Further Algonquin Pipeline pipe expansions in New York State are likely given the 42-inch pipe installations proposed by AIM, and the extremely high gas velocities in other existing segments of the New York system further downstream of Cortland."

Using the engineering information submitted to comply with Staff's December 2, 2014 data request, as well as this request, respond, in detail, to each of the aforementioned accusations made by Accufacts. As part of its response, Algonquin should address the segmentation issue raised by Accufacts.

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<sup>1</sup> Although Accufacts states Algonquin is proposing to increase its capacity by 342 Dth/d, the actual capacity increase proposed by Algonquin is 342 MDth/d.

Document Content(s)

CP14-96-000 Algonquin Data Request Accufacts No 2 121814.DOC.....1-4

**ALGONQUIN GAS TRANSMISSION, LLC**

5400 Westheimer Court  
Houston, TX 77056-5310

713.627.5400 main

**Mailing Address:**

P.O. Box 1642  
Houston, TX 77251-1642



December 23, 2014

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
Response to December 2, 2014 Data Request

Dear Ms. Bose:

On February 28, 2014, Algonquin Gas Transmission, LLC (“Algonquin”) filed its Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations (“Application”) with the Federal Energy Regulatory Commission (“Commission”) for its Algonquin Incremental Market Project (“Project”). On December 18, 2014, the Commission Staff issued a Data Request in the referenced proceeding to assist in Staff’s analysis of the Project. Staff requested a complete response within 5 days of the date of that letter. Algonquin hereby submits responses to all requests in the Data Request.

If you have any questions regarding this filing, please contact me at (713) 627-5113 or DeAndra Black, Lead Analyst, Rates and Certificates at (713) 627-5350.

Sincerely,

/s/ Chris Harvey  
Chris Harvey

Enclosures

cc: Stephanie Schumacher (FERC)  
Maggie Suter (FERC)



# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-96-000**

Verification

VERIFICATION

THE STATE OF TEXAS

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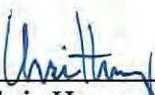
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COUNTY OF HARRIS

)

Chris Harvey, being first duly sworn, states that he is Director, Rates and Certificates, for Algonquin Gas Transmission, LLC; that he is authorized to execute this Verification; that he has read the foregoing document and is familiar with the contents thereof; and that all allegations of fact therein contained are true and correct to the best of his knowledge and belief.

ALGONQUIN GAS TRANSMISSION, LLC

  
\_\_\_\_\_  
Chris Harvey  
Director, Rates and Certificates

Subscribed and sworn to before me this 23<sup>rd</sup> day of December, 2014.



  
\_\_\_\_\_  
Notary Public, State of Texas

My Commission Expires:

November 14, 2016



**Responses to the December 18, 2014  
FERC Data Request  
Algonquin Incremental Market Project**

**VOLUME I – PUBLIC**

**December 23, 2014**

**Algonquin Gas Transmission, LLC  
Docket No. CP14-96-000**

***Prepared for:***

Federal Energy Regulatory Commission  
Office of Energy Projects  
888 First Street, N.E., Room 1A  
Washington, DC 20426

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

**DATA REQUEST RESPONSE**

1. *What are Algonquin's engineering design constraints for gas velocities on its pipeline system for both existing and proposed facilities? Does Algonquin use the erosional velocity as a limitation when designing its pipeline expansions? Explain and calculate the gas flow velocities on its system under both peak draft and pack conditions.*

**Response 1**

- a. Algonquin uses 100 feet per second as the limitation on gas velocities when designing its pipeline expansion(s) and for existing facilities.
- b. Algonquin does not use erosional velocity as a limitation when designing its pipeline expansions. See response to 1(a) above.
- c. The peak draft condition gas velocities were submitted in Response 2(b) to Staff's data request of December 2, 2014.<sup>1</sup> With respect to pack condition gas velocities, AGTFlow does not produce a report with the calculated gas velocities for the Packing period. Packing period gas velocities will be lower than those of the Draft period and they will not exceed the 100 feet per second design criteria.

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<sup>1</sup> Responses to the December 2, 2014 FERC Data Request, Docket No. CP14-96-000 (submitted Dec. 11, 2014) ("December 11 Response").

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

**DATA REQUEST RESPONSE**

2. *Under what circumstances will Algonquin allow the gas velocity to exceed its design requirements? Explain.*

**Response 2**

As stated in Response 1(a) above, Algonquin uses 100 feet per second for maximum gas velocities as its design criteria for expansions. On smaller laterals, there may be sections of pipeline on which velocities exceed 100 feet per second. The velocities on these sections are evaluated on a case-by-case basis to determine if the velocities are detrimental to the performance of the Algonquin system or if they inhibit the ability of the system to meet contractual requirements for pressure and flow. If the velocities are deemed to be acceptable after an evaluation, the velocities remain as calculated. If the velocities and accompanying pressure losses are deemed unacceptable, Algonquin will address the issue using various methods, including (i) using higher operating pressure, (ii) looping of the applicable section, (iii) using take up and relay, and (iv) using any combination of (i), (ii) and (iii) that Algonquin determines is appropriate.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

**DATA REQUEST RESPONSE**

3. *Compare and contrast Algonquin's flow diagrams with flow schematic provided by Accufacts, Inc. (Accufacts) in Exhibit No. 1 in its November 3, 2014 report.*

**Response 3**

The maximum allowable operating pressure ("MAOP") of the 26-inch diameter pipeline in Accufacts' Exhibit No. 1 is incorrect. The actual MAOP of the 26-inch diameter pipeline is 674 psig. Other than this typographical error which appears twice, Accufacts' Exhibit No. 1 is a reasonable interpretation of the flow of gas extracted from Algonquin's flow diagrams for the area around Cortlandt, New York.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

## DATA REQUEST RESPONSE

4. *Using the calculated steady-state and transient data from Algonquin's pipeline models, compare and contrast the calculated flow velocities from Algonquin's pipeline models with Accufacts' calculated flow velocities in Exhibits 4 and 5.*

### Response 4

Algonquin does not use a steady-state model for design purposes, as such Algonquin does not have steady-state based calculated flow velocities to compare to Accufacts' calculated flow velocities. A comparison of calculated flow velocities from Algonquin's transient pipeline models with Accufacts' calculated flow velocities in Exhibits 4 and 5 reflect generally consistent velocities. Specifically, there is a 95% agreement (*i.e.*, less than a 5% variance) in magnitude between the estimated Accufacts' velocities and the Algonquin calculated velocities.

The only significant exception is the 'Post-AIM' regulator-induced velocity change near Cortlandt, New York, on Accufacts' Exhibit 5 (downstream of the 'New Pressure Reducing/Letdown Valve), which Accufacts estimates as 38 fps compared to Algonquin's calculated velocity of 56 fps. Without knowing the assumptions made by Accufacts, it is indeterminable why Algonquin's velocity is higher than Accufacts at this segment. Moreover, due to the volatile flow dynamics experienced by a regulator, simulated flow calculations of a regulator can vary dramatically if consistent assumptions are not made.

GAS VELOCITY COMPARISON - ACCUFACTS vs. AGTFLOW				
EXHIBIT 4	PRE AIM		POST AIM	
	Velocity, FPS		Velocity, FPS	
SEGMENT	ACCUFACTS	AGTFLOW	ACCUFACTS	AGTFLOW
Near Cortland exit	~50	~48	<40	~37
Near Southwest CS	~69	~65	~76	~74
EXHIBIT 5	PRE AIM		POST AIM	
	Velocity, FPS		Velocity, FPS	
SEGMENT	ACCUFACTS	AGTFLOW	ACCUFACTS	AGTFLOW
Near Cortland exit	~55	~52	~27/~38	~26/~56
Near Southwest CS	~76	~72	~87	~82

There is, however, a consistent increase in both Accufacts' and Algonquin's calculated velocity downstream of the regulator. This consistent trend upward at this and at all other segments, in conjunction with the agreement in magnitude at all other segments, demonstrates an overall close alignment between Accufacts' and Algonquin's calculated flow velocities.



**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

## DATA REQUEST RESPONSE

5. *On page 2 of 11, in its November 3rd Report, Accufacts makes three accusations:*

*(i) the new 42-inch diameter pipeline in Cortland is "...considerably oversized/overbuilt for the stated capacity increase of 342 Dth/d" for the project;<sup>2</sup>*

*(ii) "(a)ctual gas velocities...for the pre-AIM existing gas transmission pipeline spanning Cortland are within acceptable ranges, but after the AIM installation are so low that considerable future possible throughput increases can be easily accommodated for these segments"; and*

*(iii) "Further Algonquin Pipeline pipe expansions in New York State are likely given the 42-inch pipe installations proposed by AIM, and the extremely high gas velocities in other existing segments of the New York system further downstream of Cortland."*

*Using the engineering information submitted to comply with Staff's December 2, 2014 data request, as well as this request, respond, in detail, to each of the aforementioned accusations made by Accufacts. As part of its response, Algonquin should address the segmentation issue raised by Accufacts.*

### Response 5

#### Response 5(i)

As explained in Response 3 of the December 11 Response, the 42-inch diameter pipeline is properly sized to meet Algonquin's existing demand and the AIM Project capacity, and is both environmentally preferable and operationally beneficial compared to the installation of a smaller diameter pipeline. Accufacts' claim that the 42-inch diameter pipeline is oversized/overbuilt for the capacity increase is based on a faulty premise. Specifically, the Accufacts analysis improperly assumes that the 42-inch diameter pipeline is a stand-alone pipe and not part of the larger system. Further, Accufacts fails to consider the length of the replacement segments into its calculation, the environmental impact of that pipeline and the operational costs to Algonquin's shippers of non-uniform pipeline diameters.

Algonquin's design takes into consideration all of Algonquin's obligations, both existing and those proposed as part of the AIM Project, over its entire system and not just at the individual section that is the subject of the Accufacts Report. In addition, in designing the AIM Project to

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<sup>2</sup> Although Accufacts states Algonquin is proposing to increase its capacity by 342 Dth/d, the actual capacity increase proposed by Algonquin is 342 MDth/d.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

**DATA REQUEST RESPONSE**

meet these obligations, Algonquin was required to ensure that gas flows on its system (i) would not exceed the MAOP of its system at Lambertville, (ii) would meet minimum contractual delivery pressures, (iii) would not exceed the maximum velocity of 100 fps, and (iv) would maintain suction pressures at the various compressor stations at not less than approximately 350-400 psig.

The AIM Project continues the take up and relay of 26-inch diameter pipe with 42-inch diameter pipe that started with the Ramapo Project in Docket No. CP06-76-000. In the Ramapo Project, Algonquin lifted and replaced approximately 4.8 miles of the existing 26-inch diameter pipeline to address increased pressure losses on the Algonquin system as a result of the Ramapo Project volumes and thereby allow the entirety of the Algonquin system to meet Algonquin's existing and Ramapo Project contractual obligations. Similarly, Algonquin is now proposing the take up and relay of additional segments of the 26-inch diameter pipeline to address the increased pressure losses on the Algonquin system as a result of the AIM Project volumes and allow the entirety of the Algonquin system to meet Algonquin's existing and AIM Project contractual obligations.

The length of the take-up and relay segments is as crucial a factor in determining proper sizing as is the diameter of the pipeline. Algonquin could have proposed a smaller diameter pipe but with a smaller diameter comes diminished performance (higher pressure losses and higher gas velocities). Thus, Algonquin would have been required to take-up and relay longer lengths of existing pipeline to address the diminished performance associated with a smaller diameter pipeline, which in turn would have increased the disturbance to the environment and the surrounding communities. In response to Accufacts' claims, Algonquin considered the alternate design utilizing 36-inch diameter pipeline instead of the proposed 42-inch diameter pipeline.<sup>3</sup> However, the smaller diameter pipeline alternative would require approximately 15.80 miles of lift and relay; almost 3.95 miles more than the proposed 11.85 miles of 42-inch diameter replacement pipeline.<sup>4</sup> Furthermore, utilizing smaller diameter pipeline would have been required Algonquin to install additional pig launcher/receiver facilities.

The 42-inch diameter replacement pipeline was also designed to maintain an appropriate operating pressure on Algonquin's system. Algonquin's system is a Pack and Draft transient system. During the Packing period, Algonquin is required to have sufficient internal pipe volume to accommodate all the gas being received and the requirement of the immediate Draft period that follows. If Algonquin were to install less than the proposed 11.85 miles of 42-inch diameter pipeline as part of the lift and relay, then the hydraulic model would reflect pressure at

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<sup>3</sup> Algonquin also considered an alternate design utilizing 30-inch diameter pipeline. Even if Algonquin replaced the entire section from the Stony Point discharge to the suction of the Southeast compressor station, this alternative design would not produce sufficient volume to meet all of Algonquin's obligations.

<sup>4</sup> Notably, both the 42-inch diameter proposal and the 36-inch diameter alternative would yield velocities below the maximum of 100 fps. Accordingly, velocity was not a critical factor for determining the size of the replacement pipe.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

**DATA REQUEST RESPONSE**

Lambertville in excess of the MAOP of the pipeline. Given that Lambertville is the largest receipt point into Algonquin, this overpressure is an indication that there would be insufficient pipe volume to accommodate the volume of gas being received from the various supply points.

**Response 5(ii);**

The observation made in the Accufacts report regarding the ability of the proposed 42-inch diameter pipeline to accept future expansions is correct, but any such future expansion also must be accompanied by the installation of additional facilities. At such time of a future expansion, Algonquin will propose new facilities as it did in the Ramapo Project and as it has done in the AIM Project. Those future expansion facilities will be appropriately sized to meet Algonquin's then-existing and proposed project capacity, as Algonquin has designed both the Ramapo Project and the AIM Project. Without such additional facilities, Algonquin would lack sufficient capacity on its entire system, *i.e.*, the velocities on certain segments, alone, do not provide additional capacity on the entire Algonquin system.

**Response No. 5 (iii)**

Algonquin does not agree with the Accufacts' characterization of "...the extremely high gas velocities in other existing segments of the New York system ... ." The gas velocities on Algonquin's system are within Algonquin's design criteria.<sup>5</sup> In addition, as stated above in response to Question 4, Accufacts' estimated gas velocities in Exhibits 4 and 5 are generally consistent with Algonquin's own calculated gas velocities.

Accufacts' claim that further expansions are likely given the 42-inch pipeline is also without merit. The likelihood of a future expansion does not depend on the diameter of the pipeline installed as part of the AIM Project or any other project. Instead, future expansion is caused by supply and demand. The Commission's certificate policy would permit Algonquin to expand its pipeline system if such expansion is supported by actual customer demand. If there is no demand for additional capacity beyond what Algonquin's existing system can supply, Algonquin will not propose, nor would the Commission permit Algonquin to build, additional facilities.

Finally, Accufacts' segmentation claim shows an absence of understanding of the concept of segmentation. Segmentation is a concept under the National Environmental Policy Act ("NEPA") that prohibits an agency from dividing connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration. Instead of identifying a project that has been impermissibly segmented from the AIM Project, Accufacts' segmentation claim is based on a hypothetical project that must be in development because, according to Accufacts, the AIM

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<sup>5</sup> Algonquin provided the velocities for the applicable sections in response to Question 2(b) in the December 11 Response.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated December 18, 2014**

**DATA REQUEST RESPONSE**

Project is oversized<sup>6</sup> and certain segments of Algonquin's system have abnormally high velocities.<sup>7</sup> For the purpose of clarification, assuming that the AIM Project was oversized or there were abnormally high velocities on Algonquin's system, these conclusions do not identify another project that is being segmented from the AIM Project environmental review. Moreover, given that both of the conclusions are rebutted above, Accufacts' hypothetical-project segmentation claim is unsupported. Finally, Algonquin has already addressed segmentation claims related to actual projects submitted in comments to the DEIS.<sup>8</sup>

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<sup>6</sup> See Accufacts Report at 5 (stating that, because it is oversized, "the AIM Project thus appears to be either an unjustified pipeline expansion or a segmentation of a larger, system-wide upgrade.").

<sup>7</sup> *Id.* at 7.

<sup>8</sup> Response to Comments on the Draft Environmental Impact Statement at 7-8, Docket No. CP14-96-000 (submitted Oct. 14, 2014)

Document Content(s)

AIM Project Responses to December 18 Data Request.PDF.....1-12

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

In Reply Refer To:  
OEP/DPC/CB-2  
Algonquin Gas Transmission,  
LLC  
Docket No. CP14-96-000  
§ 375.308(x)(3)  
January 16, 2015

Berk Donaldson  
Director, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

Re: Data Request

Dear Mr. Donaldson:

Please provide the information described in the enclosure to assist in our analysis of Algonquin Gas Transmission, LLC's (Algonquin) proposal in the above application.

File your response in accordance with the provisions of the Commission's Rules of Practice and Procedure. In particular, 18 C.F.R. § 385.2010 (Rule 2010) requires that you serve a copy of the response to each person whose name appears on the official service list for this proceeding.

**Please file a complete response within 5 days of the date of this letter.** If certain information cannot be provided within this time frame, please indicate which items will be delayed and provide a projected filing date. Any Critical Energy Infrastructure Information should be filed as non-public and labeled "Contains Critical Energy Infrastructure Information-Do Not Release" (18 C.F.R. § 388.112), and should be filed separately from the remaining information, which should be marked "Public."

File all responses under oath (18 C.F.R. § 385.2005) by an authorized representative of Algonquin and include the name, position, and telephone number of the respondent to each item.

Docket No. CP14-96-000

- 2 -

Sincerely,

Stefanie R. Schumacher  
Project Manager  
Certificate Branch 2  
Office of Energy Projects



Docket No. CP14-96-000

- 3 -

Enclosure

cc: Public File - Docket No. CP14-96-000

All Parties

Chris Harvey  
Manager, Rates and Certificates  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

Steven E. Hellman  
Associate General Counsel  
Algonquin Gas Transmission, LLC  
P.O. Box 1642  
Houston, Texas 77251-1642

**Enclosure**

1. Under what circumstances would the gas velocities be reduced, below 100 feet per second (fps), in order to prevent a situation where the gas velocities are determined, by Algonquin, to be detrimental to the performance of the Algonquin system? Explain.
2. How long has Algonquin used, as a design factor, a gas velocity of 100 fps? On average, how long will gas velocities remain at or above 100 fps during peak hour operations or "drafting" mode of operation on its pipeline? Explain.
3. In its January 6th Response, Accufacts continues to claim that the 42-inch diameter pipeline loop, from the Stony Point to the Southeast Compressor Stations, is overbuilt for the claimed capacity needed for the Project. As a result, Accufacts contends that a new smaller diameter pipe could have been used to meet Algonquin's throughput and pressure requirements while raising the operating pressure in order to lower the "high" gas velocities. Discuss, in detail, if this approach was evaluated by Algonquin and why this approach was not used by Algonquin for the final design of the Project facilities as Accufacts claims.
4. Accufacts continues to claim that Algonquin has this expansion project as part of an overall system upgrade. Accufacts believes that the individual subprojects should have been submitted as a greater overall application and that Algonquin is trying to avoid environmental requirements associated with that system upgrade. Discuss how Algonquin's design philosophy has incorporated its design to meet the requirements of the Project and if these facilities are part of an overall system upgrade.

Document Content(s)

CP14-96-000 Algonquin Data Request Accufacts No 3 011615.DOC.....1-4

January 20, 2015

Kimberly D. Bose  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

Re: Docket – CP14-96-000  
Motion for Intervener Status

Dear Madam Secretary Bose:

I hereby request to become an intervener in Docket CP14-96-000.

Due to the lack of information supplied to me, a direct abutter of the proposed West Roxbury Lateral Extension, I was not informed of the danger fracked gas, the danger of a 740 high pressure pipeline and the danger of placing a Meter Compressing Station adjacent to an active, blasting quarry in my densely populated neighborhood.

I attended the Spectra Open House and they provided no information of any risk to my neighborhood.

I am directly affected by this pipeline as an abutter and wish to participate in the process. I have very slowly educated myself and have learned of many risks and dangers of this proposal. Spectra has not been forthcoming and despite technically informing the minimum amount of direct abutters, has not included all residents in the high consequence area of a gas explosion. This proposal directly affects my home value, health and safety of my family and neighbors.

Please grant me the Motion to Intervene Out of Time.

Thank you very much,

Mary Ellen McMahon  
2356 Centre Street  
West Roxbury, MA 02132  
Private Citizen

Document Content(s)

Motion to Intervene Out of Time.DOCX.....1-1

**ALGONQUIN GAS TRANSMISSION, LLC**

5400 Westheimer Court  
Houston, TX 77056-5310

713.627.5400 main

**Mailing Address:**

P.O. Box 1642  
Houston, TX 77251-1642



January 21, 2015

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
Response to January 16, 2015 Data Request

Dear Ms. Bose:

On February 28, 2014, Algonquin Gas Transmission, LLC (“Algonquin”) filed its Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations (“Application”) with the Federal Energy Regulatory Commission (“Commission”) for its Algonquin Incremental Market Project (“Project”). On January 16, 2015, the Commission Staff issued a Data Request in the referenced proceeding to assist in Staff’s analysis of the Project. Staff requested a complete response within 5 days of the date of that letter. Algonquin hereby submits responses to all requests in the Data Request.

If you have any questions regarding this filing, please contact me at (713) 627-5113 or DeAndra Black, Lead Analyst, Rates and Certificates at (713) 627-5350.

Sincerely,

/s/ Chris Harvey  
Chris Harvey

Enclosures

cc: Stephanie Schumacher (FERC)  
Maggie Suter (FERC)

# **ALGONQUIN GAS TRANSMISSION, LLC**

## **AIM PROJECT**

**DOCKET NO. CP14-96-000**

Verification



VERIFICATION

THE STATE OF TEXAS

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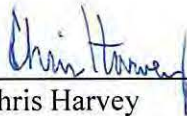
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COUNTY OF HARRIS

)

Chris Harvey, being first duly sworn, states that he is Director, Rates and Certificates, for Algonquin Gas Transmission, LLC; that he is authorized to execute this Verification; that he has read the foregoing document and is familiar with the contents thereof; and that all allegations of fact therein contained are true and correct to the best of his knowledge and belief.

ALGONQUIN GAS TRANSMISSION, LLC



Chris Harvey  
Director, Rates and Certificates

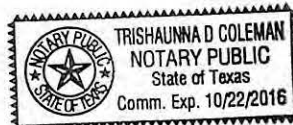
Subscribed and sworn to before me this 21<sup>st</sup> day of January, 2015.



Notary Public, State of Texas

My Commission Expires:

October 22, 2016





**Responses to the January 16, 2015  
FERC Data Request  
Algonquin Incremental Market Project**

**VOLUME I – PUBLIC**

**January 21, 2015**

**Algonquin Gas Transmission, LLC  
Docket No. CP14-96-000**

***Prepared for:***

Federal Energy Regulatory Commission  
Office of Energy Projects  
888 First Street, N.E., Room 1A  
Washington, DC 20426

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated January 16, 2015**

**DATA REQUEST RESPONSE**

1. *Under what circumstances would the gas velocities be reduced, below 100 feet per second (fps), in order to prevent a situation where the gas velocities are determined, by Algonquin, to be detrimental to the performance of the Algonquin system? Explain.*

**Response 1**

As reflected in Response 2 to the FERC Staff Data Request dated December 18, 2014 (“December 18 Data Request”), the only facilities on which Algonquin will allow the gas velocities to exceed 100 feet per second (“fps”) are sections of pipeline on smaller laterals, *i.e.*, laterals that are 8 inches (nominal) or less in diameter.<sup>1</sup> Note that the AIM Project does not involve such laterals. Currently there are no issues with respect to delivery obligations on these laterals. There are no situations on the Algonquin system where gas velocities are detrimental to performance and any future expansions will be designed to ensure gas velocities continue to not be detrimental to system performance.

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<sup>1</sup> Responses to the December 18, 2014 FERC Data Request, Algonquin Gas Transmission, LLC, Docket No. CP14-96-000 (Dec. 23, 2014) (“December 13 Response”).

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated January 16, 2015**

**DATA REQUEST RESPONSE**

2. *How long has Algonquin used, as a design factor, a gas velocity of 100 fps? On average, how long will gas velocities remain at or above 100 fps during peak hour operations or "drafting" mode of operation on its pipeline? Explain.*

**Response 2**

- (a) The exact date of the implementation of the 100 fps limit is unknown but Algonquin believes that use of the 100 fps design criteria has been in place in excess of 30 years.
- (b) The average time gas velocities are above 100 feet per second during peak hour operations or the "drafting" mode of operation is zero.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated January 16, 2015**

## DATA REQUEST RESPONSE

3. *In its January 6th Response, Accufacts continues to claim that the 42-inch diameter pipeline loop, from the Stony Point to the Southeast Compressor Stations, is overbuilt for the claimed capacity needed for the Project. As a result, Accufacts contends that a new smaller diameter pipe could have been used to meet Algonquin's throughput and pressure requirements while raising the operating pressure in order to lower the "high" gas velocities. Discuss, in detail, if this approach was evaluated by Algonquin and why this approach was not used by Algonquin for the final design of the Project facilities as Accufacts claims.*

### Response 3

As noted in its December 23 Response, Algonquin also evaluated a new pipeline of a smaller diameter line and of a higher operating pressure. As described in that response and below, the use of smaller diameter pipeline results in a greater geographic area of environmental impacts and/or does not satisfy the AIM Project's purpose and need. Accufacts' response once again fails to take into account the length of the 42-inch diameter pipeline, which is an integral part of the overall design. Accordingly, Accufacts' proposal would require an increase in Project facilities, which would result in additional disturbance and impacted stakeholders.

Algonquin evaluated using a 36-inch diameter, 850 psig MAOP pipe during the development of the AIM Project facilities and determined that using smaller diameter pipeline would increase unnecessarily the length of lift and replacement. Specifically, with respect to the Stony Point to Southeast section, using smaller diameter pipeline would increase the length of the lift and replacement for such section by approximately 3.95 miles, or 33 percent. The additional length of pipeline would result in increased environmental, residential and stakeholder disturbance, including impacts to approximately 200 additional landowners. Furthermore, the 36-inch diameter pipeline would not lower the gas velocity in the remaining sections to Accufacts' unsupported proposal of 60 fps. In fact, if the length of the lift and replacement section remains the same as stated by Accufacts, the gas velocities in the remaining sections (the 30-inch section downstream of the 42-inch lift and replacement) would not change no matter what size is used for the lift and replacement section. Accordingly, Algonquin determined that using 36-inch diameter, 850 psig MAOP pipe was not a superior alternative.

Algonquin also evaluated using a 36-inch diameter, 1440 psig MAOP pipe. Algonquin determined that using a smaller diameter pipeline with a higher MAOP required an additional 40,000 horsepower at Stony Point Compressor Station, which would require the installation of four Solar Mars 100 units instead of the one Solar Mars 100 unit proposed in the AIM Project design, with additional environmental impact.<sup>2</sup> Moreover, the increased pressure would not lower the velocity in the remaining sections of 30-inch diameter and 26-inch diameter pipe

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<sup>2</sup> Operating at 1440 psig (or any pressure above 850 psig) from the Stony Point Compressor Station also would require a complete station rebuild as the MAOP of the station is limited to 850 psig.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated January 16, 2015**

**DATA REQUEST RESPONSE**

below the 60 fps proposed by Accufacts. Specifically, the pressure decrease at the interconnection with the remaining 30-inch diameter and 26-inch diameter sections of the Algonquin system would be even greater than is proposed in the AIM Project design, which would mean that the additional compression required to operate the 36-inch diameter replacement pipeline at higher pressures could not be utilized for transportation on the existing 30-inch diameter and 26-inch diameter sections of pipeline, which are already at their MAOP, and effectively would be wasted. Based on these facts, Algonquin determined that using a 36-inch diameter, 1440 psig MAOP pipe also is not a superior alternative.

Finally, Algonquin evaluated using a 30-inch diameter, 850 psig MAOP pipe but determined that this smaller diameter pipeline would not satisfy the Project need. Even if Algonquin lifted and replaced the entire length of the Stony Point to Southeast segment with 30-inch diameter pipeline (28.9 miles), there would not be sufficient capacity on the Algonquin system to meet the current contracts and future obligations under the AIM Project. Thus, using a 30-inch diameter, 850 psig MAOP pipe is not a viable alternative.

In all of these scenarios using smaller diameter pipeline, Accufacts' claims also do not consider the portions of Algonquin's system that are not being modified. As the remaining 26-inch diameter and 30-inch diameter lines are already at their MAOP, the only way to lower the gas velocity in the remaining sections of those pipelines to meet Accufacts' proposed 60 fps limit is to replace segments of those pipelines with either higher MAOP or larger diameter pipe. These additional replacements would result in additional environmental, residential and stakeholder impacts.

**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**Response to Data Request Dated January 16, 2015**

## DATA REQUEST RESPONSE

4. *Accufacts continues to claim that Algonquin has this expansion project as part of an overall system upgrade. Accufacts believes that the individual subprojects should have been submitted as a greater overall application and that Algonquin is trying to avoid environmental requirements associated with that system upgrade. Discuss how Algonquin's design philosophy has incorporated its design to meet the requirements of the Project and if these facilities are part of an overall system upgrade.*

### Response 4

As reflected in Staff's data request, Accufacts is repeating claims that Algonquin already has addressed in its December 23 Response. As stated in the December 23 Response, the proposed AIM Project facilities are designed to satisfy existing and AIM Project capacity requirements and are not part of an overall system upgrade. Specifically, the AIM Project expands Algonquin's system by lifting and replacing 26-inch diameter pipe with 42-inch diameter, 850 psig MAOP pipe in the same way that Ramapo Project (CP06-76-000) was built on top of the system that was certificated and built before it. Algonquin's proposal and FERC Staff's draft environmental impact statement are in compliance with the National Environmental Policy Act and the regulations promulgated thereunder addressing the appropriate scope of environmental review.

Algonquin continues to design and build (as certificated by the FERC) to meet its customer's needs as well as minimize the disturbance to the stakeholders. Algonquin's proposal in the AIM Project minimizes such disturbance. Accufacts maintains that there is excess capacity in the 42-inch section. Any "excess" capacity created by the AIM Project is latent capacity, *i.e.*, it is not available without additional modifications to other facilities, similar to latent capacity created by the Ramapo Project when it went into service in 2008. Thus, Algonquin will only be able to access any such latent capacity created by the AIM Project by developing, designing, proposing and receiving FERC approval of a subsequent Project extending the 42-inch diameter pipe as necessary to meet the needs of such future Project shippers and any such FERC approval of a subsequent project would itself be subject to NEPA review.

This incremental expansion of pipeline systems is not unique to Algonquin, but, instead, is the FERC-approved industry standard that avoids the inefficient creation of additional capacity through new, greenfield construction. Any future expansion of the Algonquin system will build upon all the previous projects which resulted in the then existing system. The diameter of the pipeline installed for any current project is not the determining factor in whether or not a future expansion occurs. Such future expansion will depend upon market demands and certification by the FERC in compliance with the NEPA requirements.

Algonquin is not avoiding and will not avoid any environmental requirements associated with any system upgrade. As addressed in the December 23 Response, Accufacts' claim that



**Algonquin Gas Transmission, LLC**  
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**Response to Data Request Dated January 16, 2015**

**DATA REQUEST RESPONSE**

Algonquin is inappropriately segmenting projects is without any legal or factual basis.<sup>3</sup> Algonquin has already addressed segmentation claims related to actual projects submitted in comments to the DEIS.<sup>4</sup> Gas velocities above the arbitrary 60 fps proposed by Accufacts do not, in and of themselves, suggest that further pipe replacement projects are either needed or forthcoming as Accufacts claims. Similarly, the alleged creation of so-called “excess capacity” alone does not cause any future projects to be undertaken, nor does it require FERC to analyze in the AIM Project EIS future, speculative projects that may or may not utilize any such excess capacity. *See Wilderness Workshop v. U.S. Bureau of Land Management*, 531 F.3d 1220, 1231 (10th Cir. 2008)(NEPA analysis for gas pipeline project need not address environmental impacts of possible future development even though pipeline capacity is greater than necessary for current needs). Further, the AIM Project Environmental Impact Statement will address the cumulative impacts of one potential future project, the Atlantic Bridge Project. In any future certificate proceeding addressing the Atlantic Bridge Project, or other system upgrade, the FERC Staff will prepare an environmental report addressing the environmental impacts of any proposed project, and the impacts from the AIM Project will be addressed as baseline conditions and cumulative impacts in such report, as relevant.

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<sup>3</sup> December 23 Response at 8-9.

<sup>4</sup> Response to Comments on the Draft Environmental Impact Statement at 7-8, Docket No. CP14-96-000 (submitted Oct. 14, 2014)

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United States of America  
Before The  
Federal Energy Regulatory Commission

Spectra Energy Corp./Algonquin Gas Transmission, LLC  
West Roxbury Lateral Pipeline  
Algonquin Incremental Market ("AIM") Project

FERC Docket #: CP14-96-000

Motion for Leave to Intervene

Pursuant to Commission Rules 385.214(b) and 157.10, United States Congressman Stephen F. Lynch, Elected Officials of the City of Boston, Mayor Martin J. Walsh, City Councilor of District 6, Matt O'Malley, Boston City Councilors At-Large Michelle Wu, Michael Flaherty, Ayanna Pressley and Stephen J. Murphy and Elected Officials of the Commonwealth of Massachusetts, State Representative Edward F. Copping and State Senator Michael F. Rush move to intervene in the captioned proceeding. This motion to intervene is being filed out of time because as elected officials we recently have heard from hundreds of constituents regarding their concern about safety of the location of the West Roxbury Lateral Pipeline.

I. Contact Information

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## II. Intervenors

- United States Congressman Stephen F. Lynch of District 8, who represents 732,884 residents according to the 2010 US Census
- Martin J. Walsh, the Mayor of Boston, represents 617,594 City of Boston residents according to the 2010 US Census
- Matt O'Malley, who is the District 6 Boston City Councilor, represents 71,130 residents according to the 2012 City of Boston data
- Boston City Councilors At-Large Michelle Wu, Michael Flaherty, Ayanna Pressley and Stephen Murphy, who represent the 617,594 City of Boston residents according to the 2010 US Census
- State Representative Edward F. Copping of the 10<sup>th</sup> Suffolk district of the Commonwealth of Massachusetts represents 42,147 residents according to the 2010 US Census
- State Senator Michael F. Rush, who represents the Suffolk and Norfolk Counties of the Commonwealth of Massachusetts, represents 155,993 residents according to the 2010 US Census

## III. Interest of Petitioners

The elected officials seek to intervene in order to ensure the public safety of their constituents as well as environmental concerns. Should this project proceed, the petitioners have the following concerns:

- Plans to build a high-pressure pipeline and Metering & Regulating (M&R) Station in a densely populated area of West Roxbury that is near an active blasting quarry is potentially dangerous
- Lack of consideration of viable alternative routes by Spectra and National Grid in spite of explicit requests from the elected officials, abutters and residents in the neighborhood, as well as other neighborhoods to find another route in a nonresidential area and not bordering an active quarry.
- The impact on the community in terms of overall safety and health that goes along with a high-pressure line
- The operation of a high-pressure pipeline and M&R Station in proximity to a vulnerable community which then increases the risk of exposure to hazardous air pollutants.

## IV. Conclusion

The Intervenors represent this community that has elected them to represent their best interests. We have considerable interest in protecting the environmental, public health and safety of the area in which

the West Roxbury Lateral pipeline and M&R Station are proposed to be built. No other party in this proceeding will be able to adequately protect these interests. Accordingly, the Intervenor has a direct and substantial interest in the outcome of this application process.

V. Motion to Intervene

Consequently, for all the reasons set forth above, the Intervenor respectfully request that this Motion to Intervene be granted and that Congressman Stephen F. Lynch, Mayor Martin J. Walsh, Boston City Councilor of District 6 Matt O'Malley, Boston City Councilors At-Large Michelle Wu, Ayanna Pressley, Michael Flaherty and Stephen J. Murphy as well as State Representative Edward F. Copping and State Senator Michael F. Rush be permitted to participate, with the full rights of a party, in the above-captioned proceedings before FERC and any and all further proceedings in regard to this project.

Respectfully Submitted,

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State House  
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UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Algonquin Gas Transmission, LLC

Docket No. CP14-96-000

NOTICE OF AVAILABILITY OF THE  
FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE PROPOSED  
ALGONQUIN INCREMENTAL MARKET PROJECT

(January 23, 2015)

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a final environmental impact statement (EIS) for the Algonquin Incremental Market Project (AIM Project), proposed by Algonquin Gas Transmission, LLC (Algonquin) in the above-referenced docket. Algonquin requests authorization to expand its existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 dekatherms per day of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets.

The final EIS assesses the potential environmental effects of the construction and operation of the AIM Project in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the proposed project would result in some adverse environmental impacts; however, most of these impacts would be reduced to less-than-significant levels with the implementation of Algonquin's proposed mitigation and the additional measures recommended in the final EIS.

The U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration participated as cooperating agencies in the preparation of the EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the NEPA analysis. Although the cooperating agencies provided input to the conclusions and recommendations presented in the final EIS, the agencies will present their own conclusions and recommendations in their respective records of decision or determinations for the AIM Project.

The final EIS addresses the potential environmental effects of the construction and operation of about 37.4 miles of pipeline composed of the following facilities:

- replacement of 26.3 miles of existing pipeline with a 16- and 42-inch-diameter pipeline;



- extension of an existing loop<sup>1</sup> pipeline with about 3.3 miles of additional 12- and 36-inch-diameter pipeline within Algonquin's existing right-of-way; and
- installation of about 7.8 miles of new 16-, 24-, and 42-inch-diameter pipeline.

The AIM Project's proposed aboveground facilities consist of modifications to six existing compressor stations, to add a total 81,620 horsepower, in New York, Connecticut, and Rhode Island. Algonquin also proposes to abandon four existing compressor units for a total of 10,800 horsepower at one compressor station in New York.

The FERC staff mailed copies of the final EIS to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; newspapers and libraries in the area of the project; and parties to this proceeding. Paper copy versions of this final EIS were mailed to those specifically requesting them; all others received a CD version. However, we note that due to its voluminous size, the comment responses are provided as an electronic-only volume (Volume II) on a CD that was mailed to the entire mailing list. In addition, the final EIS is available for public viewing on the FERC's website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. A limited number of copies are available for distribution and public inspection at:

Federal Energy Regulatory Commission  
Public Reference Room  
888 First Street NE, Room 2A  
Washington, DC 20426  
(202) 502-8371

In accordance with the Council on Environmental Quality's (CEQ) regulations implementing the NEPA, no agency decision on a proposed action may be made until 30 days after the U.S. Environmental Protection Agency publishes a notice of availability of a final EIS. However, the CEQ regulations provide an exception to this rule when an agency decision is subject to a formal internal appeal process that allows other agencies or the public to make their views known. In such cases, an agency decision may be made at the same time the notice of the final EIS is published, allowing both periods to run concurrently. The Commission decision for this proposed action is subject to a 30-day rehearing period.

Additional information about the proposed project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on "General

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<sup>1</sup> A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity.

Docket No. CP14-96-000

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Kimberly D. Bose,  
Secretary.

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**Federal Energy Regulatory Commission**  
**Office of Energy Projects**  
**Washington, DC 20426**

# **Algonquin Incremental Market Project**

## ***Final Environmental Impact Statement***



**Algonquin Gas Transmission, LLC**  
**Docket No. CP14-96-000**  
**FERC/EIS-0254F**  
**Volume I**

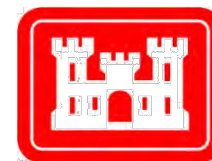
**Cooperating Agencies:**



**U.S. Environmental  
Protection Agency**



**Pipeline and Hazardous  
Materials Safety  
Administration**



**U.S. Army Corps  
of Engineers**



FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:  
OEP/DG2E/Gas 2  
Algonquin Gas Transmission, LLC  
Docket No. CP14-96-000  
FERC/EIS-0254F

TO THE PARTY ADDRESSED:

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- installation of about 7.8 miles of new 16-, 24-, and 42-inch-diameter pipeline.

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([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on “General Search,” and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP14-96). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov) or toll free at (866) 208-3676; for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

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## ACRONYMS AND ABBREVIATIONS

AAQS	ambient air quality standards
AC/DC	alternating current/direct current
ACHP	Advisory Council on Historic Preservation
AIM Project	Algonquin Incremental Market Project
Algonquin	Algonquin Gas Transmission, LLC
APA	Aquifer Protection Areas
APE	Area of Potential Effect
AQCR	Air quality control region
ATWS	additional temporary workspace
BA	biological assessment
Bay State	Bay State Gas Company d/b/a Columbia Gas of Massachusetts, Inc.
BCA	Bird Conservation Area
BCC	Birds of Conservation Concern
bcf/d	billion cubic feet per day
BCR	Bird Conservation Region
BDP Plan	Best Drilling Practices Plan
BGEPA	Bald and Golden Eagle Protection Act
BMP	best management practices
BNAN	Boston Natural Areas Network
BO	Biological Opinion
Boston Gas	Boston Gas Company d/b/a National Grid
CAA	Clean Air Act
CEAs	critical environmental areas
CEQ	Council on Environmental Quality
Certificate	Certificate of Public Convenience and Necessity
CES	Comprehensive Energy Strategy
CFR	Code of Federal Regulations
CGS	Connecticut General Statutes
CH <sub>4</sub>	methane
CHPE	Champlain Hudson Power Express
CMR	Code of Massachusetts Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalents
Colonial Gas	Colonial Gas Company d/b/a National Grid
Commission	Federal Energy Regulatory Commission
Connecticut Natural Gas	Connecticut Natural Gas Corporation
CTDEEP	Connecticut Department of Energy and Environmental Protection

## ACRONYMS AND ABBREVIATIONS (cont'd)

CWA	Clean Water Act
CWRMP	Compensatory Wetland Restoration and Mitigation Plan
CZMA	Coastal Zone Management Act of 1972
CZMP	coastal zone management program
dB	decibels
dBA	decibels on the A-weighted scale
DOE	U.S. Department of Energy
DOE/EIA	U.S. Department of Energy's Energy Information Administration
DPS	distinct population segment
DPW	Department of Public Works
Dth/d	dekatherms per day
E&SCP	Erosion and Sediment Control Plan
EDR	Environmental Data Resources, Inc.
EFH	Essential Fish Habitat
EI	Environmental Inspector
EIS	environmental impact statement
Entergy	Entergy Nuclear Operations, Inc.
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 2005
ESA	Endangered Species Act of 1973
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish and Wildlife Service
g	gravity
GHGs	greenhouse gases
GIS	Geographic Information System
GW	gigawatt
GWh	gigawatt hours
GWP	global warming potential
GZA	GeoEnvironmental, Inc.
HAP	Hazardous Air Pollutant
HCA	high consequence area
HDD	horizontal directional drill
HMM	Hatch Mott MacDonald, LLC
hp	horsepower
HPU	hydraulic power unit
IBA	Important Bird Area
IPCC	Intergovernmental Panel on Climate Change
IPEC	Indian Point Energy Center

## ACRONYMS AND ABBREVIATIONS (cont'd)

Iroquois	Iroquois Gas Transmission
IWWC	inland wetlands and watercourse agencies
kW	kilowatt
L <sub>90</sub>	lowest background A-weighted sound level that is exceeded 90 percent of the time
LDCs	local distribution companies
L <sub>dn</sub>	day-night sound level
L <sub>eq</sub>	24-hour equivalent sound level
LNG	liquefied natural gas
LOS	current level of service
LWRP	Local Waterfront Revitalization Program
M&R	metering and regulating
MACZM	Massachusetts Office of Coastal Zone Management
MADCR	Massachusetts Department of Conservation and Recreation
MAEFSB	Massachusetts Energy Facilities Siting Board
MAEOEEA	Massachusetts Executive Office of Energy and Environmental Affairs
MAOP	maximum allowable operating pressure
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MassGIS	Massachusetts Geographic Information System
m <sub>bLg</sub>	short-period body-wave magnitude
MBTA	Migratory Bird Treaty Act
MBTA MOU	Memorandum of Understanding Between the Federal Energy Regulatory Commission and the U.S. Department of the Interior United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds"
MDFW	Massachusetts Division of Fisheries and Wildlife
MECC	Massachusetts Electric Construction Company
Memorandum	Memorandum of Understanding on Natural Gas Transportation
MIPAG	Massachusetts Invasive Plant Advisory Group
MLR	mainline regulators
MLV	mainline valve
MMBtu	million metric British thermal units
MMBtu/hr	million metric British thermal units per hour
MMPA	Marine Mammal Protection Act
MNHESP	Massachusetts Natural Heritage and Endangered Species Program
MP	milepost
MSA	Magnuson-Stevens Fishery Conservation and Management Act
msl	mean sea level
MW	megawatt

## ACRONYMS AND ABBREVIATIONS (cont'd)

MWh	megawatt hours
N <sub>2</sub> O	nitrous oxide
NAAQS	national ambient air quality standards
Narragansett Electric	The Narragansett Electric Company d/b/a National Grid
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NHT	National Historic Trail
NNSR	Nonattainment New Source Review
NO <sub>2</sub>	nitrogen dioxide
NOAA Fisheries	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NOI	Notice of Intent to Prepare an Environmental Impact Statement for the Planned Algonquin Incremental Market Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NPU	Norwich Public Utilities
NRC	U.S. Nuclear Regulatory Commission
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	National Rivers Inventory
NSA	noise-sensitive area
NSPS	New Source Performance Standards
NSR	New Source Review
NSTAR	NSTAR Gas Company
NWI	National Wetlands Inventory
NYCDEP	New York City Department of Environmental Protection
NYCRR	New York Codes, Rules and Regulations
NYNHP	New York Natural Heritage Program
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSOPRHP	New York State Office of Parks, Recreation and Historic Preservation
NYSPSC	New York State Public Service Commission
OCRM	NOAA, Office of Ocean and Coastal Resource Management
OEP	Office of Energy Projects

## ACRONYMS AND ABBREVIATIONS (cont'd)

OPS	Office of Pipeline Safety
ORW	Outstanding Resource Waters
OSHA	Occupational Safety and Health Administration
PAR	permanent access roads
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PEM	palustrine emergent
PFO	palustrine forested
PGA	peak ground acceleration
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIPC	Palisades Interstate Park Commission
Plan	Upland Erosion Control, Revegetation, and Maintenance Plan
PM	particulate matter
PM <sub>10</sub>	particulate matter less than 10 microns in aerodynamic diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in aerodynamic diameter
PNHP	Pennsylvania Natural Heritage Program
Primary Aquifers	Primary Water Supply Aquifers
Procedures	Wetland and Waterbody Construction and Mitigation Procedures
Project	Algonquin Incremental Market Project
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
PTE	potential-to-emit
RCSA	Regulation of Connecticut State Agencies
RHA	Rivers and Harbors Act
RICE	reciprocating internal combustion engines
RIDEM	Rhode Island Department of Environmental Management
RQD	rock quality designation
SCFWH	Significant Coastal Fish and Wildlife Habitat
SDWA	Safe Drinking Water Act
Secretary	Secretary of the Commission
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
SOP	standard operating procedure
Southern Connecticut	The Southern Connecticut Gas Company
SPCC Plan	Spill Prevention Control and Countermeasure Plan/Preparedness, Prevention, and Contingency Plan for the Algonquin Incremental Market Project
SPDES	State Pollution Discharge Elimination System
Spectra	Spectra Energy Corporation

## ACRONYMS AND ABBREVIATIONS (cont'd)

SPL	sound pressure level
SSA	sole or principal source aquifer
SSURGO	Soil Survey Geographic Database
SWAP	Source Water Assessment Program
SWPPP	Stormwater Pollution Prevention Plan
TAR	temporary access roads
Tennessee	Tennessee Gas Pipeline
TSA	Office of Homeland Security's Transportation Safety Administration
TTC	temporary traffic control
USACE	U.S. Army Corps of Engineers
USET	United South and Eastern Tribes Inc.
USC	United States Code
USDA	U.S. Department of Agriculture
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
USN	unique site number
VOC	volatile organic compound
WEG	wind erodibility group
WPP	West Point Partners
WPT	West Point Transmission
WQC	Water Quality Certification
Yankee Gas	Yankee Gas Services Company

# EXECUTIVE SUMMARY

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## INTRODUCTION

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared this final Environmental Impact Statement (EIS) to fulfill requirements of the National Environmental Policy Act of 1969 and the Commission's implementing regulations under Title 18 of the Code of Federal Regulations (CFR) Part 380. On February 28, 2014, Algonquin Gas Transmission, LLC (Algonquin) filed an application with FERC under sections 7(b) and (c) of the Natural Gas Act, as amended, and Part 157 of the Commission's regulations to construct, abandon, install, own, operate, and maintain expansions of its existing interstate natural gas pipeline systems in New York, Connecticut, Rhode Island, and Massachusetts. This project is referred to as the Algonquin Incremental Market Project (AIM Project or Project). The purpose of this document is to inform the public and federal and state agencies about the potential environmental impacts of the Project and its alternatives, and to recommend appropriate mitigation that would avoid or reduce adverse impacts.

The FERC is the federal agency responsible for authorizing interstate natural gas transmission facilities under the Natural Gas Act, and is the lead federal agency for the preparation of this EIS in compliance with the requirements of the National Environmental Policy Act. The U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers (USACE), and the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration, participated as cooperating agencies in the preparation of the EIS. A cooperating agency has jurisdiction by law or has special expertise with respect to environmental resource issues associated with a project.

## PROPOSED ACTION

The Project would involve the construction and operation of about 37.4 miles of natural gas pipeline and associated equipment and facilities in New York, Connecticut, and Massachusetts. The majority of the pipeline facilities (about 26.3 miles or 70 percent of the total 37.4 miles) would replace existing Algonquin pipelines, while the remainder of the pipeline facilities (about 11.1 miles or 30 percent) consists of new mainline pipeline, new loop pipeline, and one new lateral pipeline. In addition to the pipeline facilities, Algonquin would modify 6 existing compressor stations and 24 existing metering and regulating (M&R) stations; construct 3 new M&R stations; and remove an existing M&R station. Modifications to the six existing compressor stations include the installation of 81,620 total horsepower (hp) in New York, Connecticut, and Rhode Island. Algonquin also proposes to abandon four existing compressor units for a total of 10,800 hp at one compressor station in New York. Algonquin would also modify three existing mainline valve (MLV) sites and five existing pig<sup>1</sup> launcher/receiver sites, construct five new launcher/receiver sites, construct new MLV cross over piping at two locations, and construct a new MLV. Mainline regulation facilities would also be added at the terminus of one of the pipeline segments in New York.

According to Algonquin, the purpose of the AIM Project is to expand its existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 dekatherms per day of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets. Algonquin's stated objectives for the Project are:

- to provide the pipeline capacity necessary to transport additional natural gas supplies to meet the immediate and future load growth demands of local gas utilities in southern New England;

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<sup>1</sup> A pipeline "pig" is a device to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline.



- eliminate capacity constraints on existing pipeline systems in New York State and southern New England;
- provide access to growing natural gas supply areas in the Northeast region to increase competition and reduce volatility in natural gas pricing in southern New England; and
- improve existing compressor station emissions through the replacement of existing compressor units with new, efficient units.

## PUBLIC INVOLVEMENT

On June 18, 2013, Algonquin filed a request with the FERC to implement the Commission's pre-filing process for its Project. At that time, Algonquin was in the preliminary design stage of its Project and no formal application had been filed. The purpose of the pre-filing process is to encourage the early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the FERC. On June 28, 2013, the FERC granted Algonquin's request and established a pre-filing docket number (PF13-16-000) to place information related to the Project into the public record. The cooperating agencies agreed to conduct their environmental reviews of the Project in conjunction with the Commission's environmental process.

On September 13, 2013, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Algonquin Incremental Market Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings* (NOI). The NOI was published in the Federal Register on September 19, 2013, and copies were mailed to over 1,800 parties, including representatives of federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; other interested parties; and local libraries and newspapers. The FERC staff continued to receive and consider comments during the entire pre-filing period and throughout the development of this EIS. We<sup>2</sup> held four public scoping meetings in the AIM Project area to solicit and receive comments on environmental issues associated with this Project. The meetings were held September 30, 2013 through October 3, 2013 in the Town of Cortlandt, New York; Danbury and Norwich, Connecticut; and the Town of Dedham, Massachusetts.

Additionally, we participated in Algonquin's open houses, interagency meetings, conference calls, and site visits for the AIM Project to identify issues to be addressed in this EIS. The meetings, conference calls, and site visits provided a forum for the exchange of information and supported the FERC's responsibility to coordinate federal authorizations and associated environmental review of the AIM Project.

On August 6, 2014, we issued a *Notice of Availability of the Draft Environmental Impact Statement for the Proposed Algonquin Incremental Market Project*. This notice, which was published in the Federal Register, listed the dates and locations of public comment meetings and established a closing date of September 29, 2014 for receiving comments on the draft EIS. Copies of the draft EIS were mailed to over 2,740 stakeholders. The EPA noticed receipt of the draft EIS in the Federal Register on August 15, 2014.

We held five public comment meetings in the AIM Project area to solicit and receive comments on the draft EIS. The meetings were held between September 8 and 16, 2014 in the Town of Dedham, Massachusetts; Norwich, Connecticut; Danbury, Connecticut; the Town of Cortlandt, New York; and the Town of Mapleville, Rhode Island. The meetings provided the public an opportunity to present oral

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<sup>2</sup> The pronouns "we," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

comments on the analysis of environmental impacts described in the draft EIS. This final EIS addresses all substantive comments submitted to the FERC or received at the open houses, scoping meetings, interagency meetings, and comment meetings on the draft EIS.

## **PROJECT IMPACTS AND MITIGATION**

Construction and operation of the Project could result in numerous impacts on the environment. We evaluated the impacts of the Project, taking into consideration Algonquin's proposed mitigation measures, on geology, soils, groundwater, surface water, wetlands, vegetation, wildlife, fisheries, special status species, land use, recreation, visual resources, socioeconomics, cultural resources, air quality, noise, and safety and reliability. Where necessary, we are recommending additional mitigation to minimize or avoid these impacts. Cumulative impacts of this Project with other past, present, and reasonably foreseeable actions in the Project area were also assessed. In section 3 of this EIS, we summarize the evaluation of alternatives to the Project, including the No Action Alternative, energy alternatives, system alternatives, facility design and siting alternatives, route alternatives and variations, and aboveground facility siting alternatives.

Based on scoping comments, comments on the draft EIS, agency consultations, and our independent evaluation of resource impacts, the major issues identified in our analysis are in regard to blasting impacts, waterbody crossings, wetlands, special status species, land use and recreation, traffic impacts, safety, and alternatives. Our analysis of these issues is summarized below and is discussed in detail in the appropriate resource sections in sections 3 and 4 of this EIS. Sections 5.1 and 5.2 of this EIS contain our conclusions and a compilation of our recommended mitigation measures, respectively.

The potential for geologic hazards, including seismic events, to significantly affect construction or operation of the proposed Project facilities is low. The U.S. Geological Survey has extensively studied the Ramapo Fault system and the level of seismicity in the region. The U.S. Geological Survey's review of data indicates that there is no clear association between the fault and small earthquakes that do occur in the region. Further, there is insufficient geologic evidence to indicate the existence of a tectonic fault or Holocene-age slip or deformation associated with the fault. In any case, the design of the pipeline takes into consideration site-specific conditions, including earthquakes. The recorded magnitude of earthquakes in the Project area is relatively low and the ground vibration would not pose a problem for a modern welded-steel pipeline.

The pipeline segments would traverse about 7.2 miles of shallow bedrock that may require blasting. In order to minimize potential impacts from blasting, Algonquin would comply with all federal, state, and local regulations for blasting and has developed an acceptable Rock Removal Plan to be used during construction.

Existing soil contamination could be encountered during construction. Algonquin has developed an Unexpected Contamination Encounter Procedures to address the measures it would implement if contaminated soils are crossed during construction. To-date, Algonquin has also determined that field sampling would be required at two locations (one in Connecticut and one in Massachusetts). However, the Connecticut Department of Energy and Environmental Protection (CTDEEP) also identified a concern at a third site. We are recommending that prior to construction, Algonquin develop a Field Sampling Plan for these and any other potential contaminated sites that could be encountered during construction.

The Project would cross 102 waterbodies, including 36 perennial streams, 62 intermittent streams, 3 ephemeral streams, and a ponded area. Algonquin proposes to use a dry crossing method (i.e., flume or dam-and-pump) to install all but two of the waterbody crossings. The other two waterbodies would be crossed using the horizontal directional drill (HDD) method (Hudson and Still Rivers). Dry

crossing methods typically result in lower sedimentation and associated turbidity impacts when compared to conventional wet crossing methods.

The Project would cross the Hudson River in New York and the Still River in Connecticut using the HDD method. Algonquin performed geotechnical feasibility studies at the proposed HDD sites and developed site-specific crossing plans for both of the crossings. Algonquin has also developed a Best Drilling Practices, Monitoring, and Clean-up of Horizontal Directional Drilling Inadvertent Returns Plan (BDP Plan) that describes the measures that would be taken to minimize the potential for inadvertent returns and releases at these two locations. Algonquin's implementation of the HDD method at the Hudson and Still Rivers would avoid in-stream disturbance of these waterbodies.

Several comments were received about the Project's potential to impact the watersheds that supply water to the New York City metropolitan area, including the Croton, the Catskill, and the Delaware Water Supply Systems. At the Catskill Aqueduct crossing, Algonquin would remove its existing 26-inch-diameter pipeline and casing, but not disturb the existing protective concrete slab, pending concurrence from the New York City Department of Environmental Protection. Algonquin would build the proposed 42-inch-diameter pipeline above the aqueduct at a 50-foot offset from the existing line. This offset would provide sufficient vertical clearance between the new pipeline and the Catskill Aqueduct. Algonquin is consulting with the New York City Department of Environmental Protection to develop a final crossing plan for the Catskill Aqueduct. Construction activities would be conducted in accordance with Algonquin's Erosion and Sediment Control Plan (E&SCP), Spill Prevention Control and Countermeasure Plan, Unexpected Contamination Encounters Procedures, Rock Removal Plan, BDP Plan, and construction stormwater plans and permits. With these protection measures in place, construction and operation of the Project would not result in significant impacts on surface water resources, including the Croton, Catskill, and Delaware water supply systems.

Construction of the Project would impact 52.5 acres of wetlands, about 23.9 acres in New York and 28.6 in Connecticut. Of the total wetland acreage, about 35.5 acres (67 percent) would involve herbaceous and shrub-scrub wetlands, and the remaining 17.0 acres (33 percent) would involve forested wetlands. About 2.4 acres of the forested wetlands would be permanently converted to non-forested wetlands during operation of the pipeline facilities. The remaining 14.6 acres of forested wetlands would eventually revert to preconstruction conditions following construction. The Project would not result in any permanent loss of wetlands. In addition, two vernal pools would be located within the temporary construction area for the Project facilities in New York.

Construction and operation-related impacts on wetlands and vernal pools would be mitigated by implementing the wetland protection and restoration measures contained in Algonquin's E&SCP, Invasive Plant Species Control Plan, and any additional conditions of the wetland permits that could be issued by the USACE, New York State Department of Environmental Conservation (NYSDEC), and CTDEEP. Algonquin proposes to provide compensatory mitigation for the permanent conversion of forested wetlands to a non-forested wetland type. Algonquin's implementation of a final, agency-approved Wetland Mitigation Plan would further offset any adverse impacts on wetland functions that would result from the permanent conversion of these wetlands. The USACE, NYSDEC, and CTDEEP would review and incorporate the final plan into Project permits. We are recommending that Algonquin identify any additional avoidance or mitigation measures for the two vernal pools through the permit review process with the applicable agencies, prior to construction.

Impacts on vegetation from the proposed Project would range from short-term to permanent due to the varied amount of time required to reestablish certain community types, as well as the maintenance of grassy vegetation within the permanent right-of-way and the conversion of aboveground facility locations to non-vegetated areas. Construction of the proposed Project facilities would temporarily

disturb about 352.4 acres of vegetation (160.9 acres of open land and 191.5 acres of forested vegetation) and permanently affect 34.7 acres (7.7 acres of open land and 27.0 acres of forested vegetation). The Project would also affect vegetation communities of special concern, including chestnut oak forests. Algonquin would limit the amount of disturbance to chestnut oak forests by utilizing the existing pipeline right-of-way during construction to the extent possible. Overall, the Project would not contribute significantly to new forest fragmentation because the proposed pipeline routes are located along existing rights-of-way and in areas that are already developed and highly fragmented.

The Project would affect wildlife and wildlife habitats, including migratory birds, along the pipeline route and at the aboveground facilities. Algonquin has minimized potential effects on significant or sensitive wildlife habitats by locating the majority of pipeline facilities within or adjacent to existing rights-of-way to the maximum extent possible. Algonquin would also use the HDD crossing method at the Hudson River crossing to avoid direct effects to the Hudson River Important Bird Area, aquatic habitats, and adjacent riparian habitats. Algonquin would implement its E&SCP and any permit conditions developed through consultation with the applicable federal and state agencies to minimize the effects of the Project on wildlife and their habitats. We find that these measures would minimize the effects of the Project on wildlife, including birds of conservation concern and other migratory birds. The U.S. Fish and Wildlife Service (FWS) confirmed that Algonquin's proposed measures are sufficient for minimizing impacts on migratory birds, and consultation for migratory birds protected under the Migratory Bird Treaty Act is complete.

Thirty of the Project waterbody crossings support fisheries of special concern. Eight waterbodies are waters with naturally occurring spawning populations of trout. One waterbody (the Hudson River) contains threatened and endangered species and anadromous fisheries. Implementation of Algonquin's construction, restoration, and mitigation procedures would result in only limited, short-term impacts on fishery resources, and the aquatic habitats upon which these fishery resources depend. Invertebrate populations would recolonize the crossing area and all temporary construction workspace areas would revert to their original condition, including re-establishment of riparian cover. Furthermore, operation and routine maintenance of the pipeline rights-of-way are not expected to have any noticeable impact on fishery resources in the Project area.

Through consultation with National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), we have determined that the only waterbody crossing where essential fish habitat species could potentially occur is the Hudson River. Given the proposed use of the HDD construction method and the fact that no water would be withdrawn from the Hudson River to support Project construction, we conclude that the Project would have minimal, if any, adverse effects on essential fish habitat or managed species. NOAA Fisheries has concurred with this assessment. We have also determined that the Project would have no effect on marine mammals protected under the Marine Mammal Protection Act because they are not anticipated to occur within the Project area of the Hudson River.

Based on Algonquin's consultations with NOAA Fisheries and the FWS and our review of existing records, nine federally listed threatened or endangered species are potentially present in the vicinity of the Project (as well as one candidate species and one species proposed for listing as endangered). Based on these consultations, we determined that the AIM Project would have *no effect* on the shortnose sturgeon, Atlantic sturgeon, piping plover, roseate tern, Puritan tiger beetle, northern red-bellied cooter, and small whorled pogonia; *may affect, but would not likely adversely affect* the bog turtle and Indiana bat; *would not likely jeopardize the continued existence* of the northern long-eared bat; and *would not contribute to a trend toward federal listing* of the New England cottontail. NOAA Fisheries concurred with this determination for the Atlantic and shortnose sturgeon and consultation is complete for these species. The FWS has concurred with this determination for the piping plover, roseate tern, Puritan

tiger beetle, northern red-bellied cooter, small whorled pogonia, bog turtle, Indiana bat, northern long-eared bat, and the New England cottontail, and consultation is complete for these species as well. Algonquin is also continuing to consult with the NYSDEC and CTDEEP regarding impacts on state-listed species. No state-listed species would be affected in Rhode Island or Massachusetts.

Algonquin conducted bald eagle surveys for the Hudson River crossing area and identified wintering eagles. No bald eagle nests were observed in the Project area or within 0.5 mile of the Project. We have concluded, and the FWS concurs, that the Project would not result in harm to bald eagles. Algonquin continues to consult with the NYSDEC to discuss survey results and state-level concerns for bald eagles, and develop and implement any state-level avoidance and mitigation measures, including timing restrictions, as necessary, to avoid impacts on bald eagles.

Construction of the Project would impact about 575.6 acres. About 78 percent of this acreage would be utilized for the pipeline facilities. The remaining acreage impacted during construction would be associated with aboveground facilities (16 percent), pipe and contractor ware yards (5 percent), and access roads (less than 1 percent). The primary land use types impacted during construction would be forest/woodland (33 percent), open land (28 percent), industrial/commercial land (26 percent), and residential land (9 percent). Agricultural land and open water would make up the remaining 4 percent of land types impacted during construction of the proposed Project.

Following construction, about 42.4 acres of new land outside of Algonquin's existing permanent right-of-way would be permanently encumbered by operation of the Project. About 80 percent of this acreage would be for the new pipeline right-of-way, 16 percent for aboveground facilities, and 4 percent for new permanent access roads. The primary land use types that would be permanently encumbered by new easements would be forest/woodland (64 percent), open land (18 percent), industrial/commercial land (7 percent), and agricultural land (7 percent). Open water and residential land would make up the remaining 4 percent of new permanent impacts.

Algonquin's proposed construction work areas would be located within 50 feet of 332 residential structures (i.e., houses and apartment buildings) and 94 non-residential structures (i.e., commercial or industrial facilities, sheds, garages). To address impacts on residences, Algonquin developed Residential Construction Plans to inform affected landowners of proposed measures to minimize disruption and to maintain access to the residences during construction. We have reviewed the revised Residential Construction Plans submitted on September 29, 2014. We conclude that Algonquin's revised Residential Construction Plans are sufficient to minimize, to the extent possible, potential impacts on residences within 10 feet of the construction workspace and are acceptable overall. However, we are recommending that Algonquin provide a revised set of Residential Construction Plans that incorporate and address any comments Algonquin received from affected landowners, prior to construction.

In general, Project impacts on recreational and special interest areas would be temporary and limited to the period of active construction, which typically lasts several weeks or months in any one area. These impacts would be minimized by implementing the measures in Algonquin's E&SCP, traffic management plans, Fugitive Dust Control Plan, as well as measures to ensure that noise is mitigated. Algonquin developed site-specific measures to further minimize impacts on the Buchanan-Verplanck Elementary School in New York; Dodd Stadium in Norwich, Connecticut; the Norfolk Golf Club in Westwood, Massachusetts; Gonzalez Field in Dedham, Massachusetts; and St. Theresa of Avila School in West Roxbury, Massachusetts, all of which would sufficiently minimize impacts on these areas. Algonquin also developed site-specific measures to minimize impacts on St. Patrick's Church in Verplanck, New York; however, we are recommending that a revised site-specific plan be developed incorporating additional mitigation measures.

To address traffic impacts related to road crossings and in-street construction in densely populated areas, Algonquin has prepared separate Traffic Management Plans for the West Roxbury Lateral in Massachusetts and pipeline segments in New York. The plans include measures to address motor vehicles, parking, and considerations for pedestrians, bicycles, and construction workers. We have reviewed these plans and found them acceptable with the exception of a portion of the Traffic Management Plan for the New York pipeline segments. Therefore, we are recommending that Algonquin provide a revised plan that includes the site-specific details for several road crossings prior to construction. Impacts on traffic during construction along the West Roxbury Lateral would result in localized, unavoidable significant adverse impacts, particularly at the Spring Street/Centre Street intersection. However, with the implementation of Algonquin's Traffic Management Plan for the West Roxbury Lateral, impacts resulting from in-street construction would be minimized to the extent possible and would be reduced to less than significant levels at all other locations along the West Roxbury Lateral.

Construction of the Project would result in minor beneficial socioeconomic impacts due to increases in construction jobs, payroll taxes, purchases made by the workforce, and expenses associated with the acquisition of material goods and equipment. Operation of the Project would have a minor to moderate positive effect on the local governments' tax revenues due to the increase in property taxes that would be collected from Algonquin.

Algonquin conducted archival research and walkover surveys of the proposed Project area to identify historic aboveground properties and locations for additional subsurface testing in areas with potential for prehistoric and historic archaeological sites. Algonquin then conducted field surveys for aboveground properties and archaeological sites. Algonquin identified a total of 43 archaeological sites within the Project's area of potential effect. Of these, 28 require additional testing to determine eligibility for listing on the National Register of Historic Places (NRHP); 13 are not eligible; 1 is eligible for listing but would be avoided by the Project; and 1 is listed on the NRHP but would also be avoided by the Project. In addition, 388 historic aboveground resources were identified within the area of potential effect, the majority of which (359) are not eligible for listing on the NRHP and no further work is recommended. The Project would not result in any significant or adverse effects on the remaining 29 identified historic aboveground resources. To ensure that our responsibilities under section 106 of the National Historic Preservation Act are met, we are recommending that Algonquin not begin construction until any additional required surveys are completed, remaining survey reports and treatment plans (if necessary) have been reviewed by the appropriate parties, and we provide written notifications to proceed.

We consulted with nine tribes to provide an opportunity to identify any concerns about properties of traditional religious or cultural significance that may be affected by this undertaking. Eight of the tribes have contacted FERC staff to express an interest in the Project, request additional information, request to be kept apprised of the Project, and/or to accompany the archaeological field crews. Consultations with several other governmental organizations, non-governmental organizations, non-federally recognized tribes, and municipal historic preservation commissions in New York and Massachusetts were also conducted to provide them an opportunity to comment on the Project.

Air quality impacts associated with construction of the Project would include emissions from fossil-fueled construction equipment and fugitive dust. Such air quality impacts would generally be temporary and localized, and are not expected to cause or contribute to a violation of applicable air quality standards. Algonquin has prepared a Fugitive Dust Control Plan that describes the mitigation measures that would be implemented to control fugitive dust during Project construction, especially in sensitive areas such as road crossings, residences, and nonattainment areas. We have reviewed the Fugitive Dust Control Plan and find it acceptable.

Due to modifications on existing equipment and/or removal of existing compressors, the potential emissions of most pollutants at the Stony Point and Southeast Compressor Stations would be reduced from their current potential levels. Further, based on the identified estimated emissions from operation of the proposed Project facilities and review of the modeling analysis for all compressor stations, the Project would result in continued compliance with the National Ambient Air Quality Standards, which are protective of human health, including children, the elderly, and sensitive populations. Therefore, with the mitigation measures proposed by Algonquin, we do not anticipate that construction and operation of the proposed Project facilities would have a significant impact on air quality in the Project area or in the region itself.

Noise would be generated during construction of the pipeline and aboveground facilities. Noise impacts during construction would be highly localized and attenuate quickly as the distance from the noise source increases. The one exception to this would be certain HDD activities at the Hudson River and Interstate 84/Still River crossings. Algonquin would implement mitigation at all proposed HDD entrance locations to reduce the predicted noise generated by the HDD operations below the FERC noise requirement of 55 decibels on an A-weighted scale – day/night average at the closest noise sensitive areas. In response to traffic concerns raised by municipalities due to the proposed construction along portions of the West Roxbury Lateral, Algonquin has committed to nighttime construction along Providence Highway and the High Street/East Street intersection to minimize traffic impacts on this roadway. Nighttime construction in these residential areas would result in a temporary impact on noise levels to the nearby noise sensitive areas. However, we note that Project construction would be similar to other road construction activities, which would also likely occur at night to avoid similar traffic impacts.

The modified compressor stations would generate noise on a continuous basis (i.e., 24 hours per day) once operating. Some noise would also be generated by the operation of M&R stations and the proposed mainline regulators. We reviewed the compressor station noise analyses and agree that, if properly implemented, the noise control measures would ensure that noise attributable to the modified compressor stations would be less than the FERC noise requirement at nearby noise sensitive areas. However, where the noise currently attributable to the compressor station is greater than our noise requirement, the noise attributable to the station modifications would cause no perceptible change to station noise levels. To ensure that the actual noise levels produced at the aboveground facilities are not significant, we are recommending that Algonquin submit operational noise surveys and add noise mitigation, as necessary, until noise levels are below our acceptable thresholds.

The pipeline and aboveground facilities associated with the AIM Project would be designed, constructed, operated, and maintained to meet or exceed the Pipeline and Hazardous Materials Safety Administration's Minimum Federal Safety Standards in 49 CFR 192 and other applicable federal and state regulations. The regulations include specifications for material selection and qualifications; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. By designing and operating the Project in accordance with the applicable standards, the Project would not result in significant increased public safety risk.

We received several scoping comments concerning the safety of the Project and its proximity to the Indian Point Energy Center (IPEC), a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Because of the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that it would implement, the proposed route would not pose any new safety hazards to the IPEC facility. On August 21, 2014, after consultations between Entergy Nuclear Operations, Inc. (Entergy) and Algonquin, Entergy filed with the Nuclear Regulatory Commission its Safety Evaluation for the AIM Project. In its Safety Evaluation, Entergy concluded that the AIM Project poses no increased risks to the IPEC facility. The Nuclear Regulatory Commission reviewed the site hazards analysis performed by Entergy and performed an



independent confirmatory analysis of the blast analysis as well. The Nuclear Regulatory Commission concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the IPEC facility.

We also received several comments expressing safety concerns about potential interactions between Algonquin's proposed pipeline facilities and the West Point Partners' transmission line. Algonquin has committed to conduct an alternating current/direct current (AC/DC) interference study and incorporate field surveys and comprehensive modeling to identify potential adverse effects on the pipeline from stray currents. Although pipelines are routinely sited adjacent to electric transmission lines, we are recommending additional information to ensure that safety concerns about potential AC/DC interactions are adequately addressed. This includes receiving Algonquin's AC/DC interference study associated with the West Point Transmission Project and documentation of all consultations with West Point Partners, as well as any additional mitigation measures addressing safety-related issues or conflicts identified in the study.

We received numerous comments during scoping and on the draft EIS for the Project about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus shale region. Activities associated with Marcellus shale development would occur outside of the Project area's region of influence. As a result, the local resources that may be affected by Marcellus shale development would not be affected by the Project, and local resources affected by the Project would not be affected by development in the Marcellus shale region. Impacts associated with the proposed Project in combination with other projects identified within the region of influence would be relatively minor overall. We have included recommendations in the EIS to further reduce the environmental impacts associated with the AIM Project, as summarized in section 5.2. Additionally, Algonquin selected a route that collocates with existing rights-of-way where feasible. Therefore, we conclude that the cumulative impacts associated with the AIM Project, when combined with other known or reasonably foreseeable projects, would be effectively limited.

We also received numerous comments about cumulative impacts of the proposed Atlantic Bridge Project. Preliminary details about the Atlantic Bridge Project have been provided by Algonquin but no application has been filed. If this project moves forward as currently planned, it would impact resources in many of the same areas as the AIM Project and the level of impacts would be similar to those of the AIM Project. The AIM Project would be constructed in 2015 and 2016, and the disturbed areas would be restored prior to any start of the Atlantic Bridge Project, which at its earliest would be constructed in 2017. Another planned Algonquin project is the Access Northeast Project. Spectra Energy's website indicates that the company hoped to secure expression of interest from potential customers by the end of 2014, but it does not provide any information about the size or location of the proposed facilities. Spectra Energy indicates that, if they receive adequate market support, they would begin seeking regulatory approvals in 2015 with a goal of constructing and placing the facilities in service by the end of 2018. The Access Northeast Project would not occur at the same time as the AIM Project, and project details are not known at this time.

## **ALTERNATIVES CONSIDERED**

The No Action Alternative was considered for the Project. While the No Action Alternative would eliminate or delay the short and long-term environmental impacts identified in this EIS, Algonquin would be unable to supply an additional 342,000 dekatherms per day of natural gas to its existing mainline system; increase deliveries to the Project shippers at existing delivery points in southern New England; or provide three new delivery points for the Project shippers. We also considered the use of alternative energy sources and the potential effects of energy conservation, but these measures similarly would not satisfy the objectives of the Project, provide an equivalent supply of energy, or meet the

demands of the Project shippers. We concluded that the No Action Alternative, alternative energy sources, and energy conservation were not viable alternatives to the proposed Project in the required timeframe.

Our analysis of system alternatives included an evaluation of the existing Tennessee Gas Pipeline and Iroquois Gas Transmission systems as well as the planned Connecticut Expansion and Northeast Energy Direct Projects. None of the existing, proposed, or planned natural gas pipelines reach the delivery points required by the Project shippers in southern New England. To provide service to these delivery points, the existing and planned systems would need to be modified by constructing hundreds of miles of new pipeline, much of which would duplicate the existing Algonquin system. This would result in greater environmental impacts than the Project. Consequently, none of the system alternatives provide an environmental advantage over the proposed Project.

We evaluated Algonquin's proposed design for the Project to determine if any alternative designs would be feasible and environmentally preferable to the Project. We determined that alternative designs would result in operational inefficiencies associated with flow characteristics of natural gas within the system, and would shift, but not avoid, environmental impacts from one location to another. For these reasons, we concluded that alternative designs would not be practical or provide an environmental advantage over the proposed Project.

We also considered the feasibility of electric-driven compressor units in lieu of gas-fired units at each of the existing compressor station sites. We concluded that use of electric-driven compressor units would result in additional environmental impacts due to the installation of non-jurisdictional facilities such as electric transmission lines and substations. Although electric-driven units would result in lower operating emissions, Algonquin would be required to comply with its existing air permits at each site. For these reasons, electric-driven compressors would not be preferable to or provide a significant environmental advantage over the proposed Project.

Prior to the issuance of the draft EIS, we evaluated route alternatives for the Hudson River crossing and for the West Roxbury Lateral, several minor route variations along different segments of the Project, and site alternatives for M&R stations at the new delivery points in Connecticut and Massachusetts. We determined that none of the route or site alternatives or variations would offer significant environmental advantages over the Project. Following issuance of the draft EIS, Algonquin evaluated several route variations it incorporated into its proposed route and we received comments requesting that we evaluate other alternatives and variations to the newly proposed route. This final EIS includes a more detailed analysis of these nine route alternatives/variations. Seven of them were determined to be advantageous to the original proposed route and were incorporated into the Project. Algonquin also evaluated 23 minor pipeline shifts, workspace adjustments, and/or design modifications. We conducted a more detailed review of these proposed changes and determined that 19 of them were advantageous and were incorporated into the Project design. We also evaluated alternative construction methods for several waterbody and wetland crossings; however, none were found to be feasible or preferable to the proposed construction methods.

## **MAJOR CONCLUSIONS**

We determined that construction and operation of the Project would result in some adverse environmental impacts but most impacts would be reduced to less-than-significant levels. This determination is based on a review of the information provided by Algonquin and further developed from environmental information requests; site visits; scoping; literature research; alternatives analyses; and contacts with federal, state, and local agencies, and other stakeholders.

Although many factors were considered in this determination, the principal reasons are:

- About 35.0 miles (93 percent) of the 37.4 miles of AIM Project pipeline facilities would be within or adjacent to existing rights-of-way, consisting of Algonquin pipeline rights-of-way, public roadways, railways, and electric transmission line corridors.
- The majority of the pipeline facilities (70 percent) would replace existing Algonquin pipelines within existing rights-of-way.
- Algonquin would minimize impacts on natural and cultural resources during construction and operation of the Project by implementing its E&SCP; Spill Prevention, Control and Countermeasure Plan; Unexpected Contamination Encounter Procedures; Invasive Plant Species Control Plan; BDP Plan; Compensatory Mitigation Plan; Residential Construction Plans; Traffic Management Plans for New York and the West Roxbury Lateral; Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains; and Fugitive Dust Control Plan.
- Algonquin would utilize the HDD method to cross the Hudson and Still Rivers, which would avoid any direct impacts on these resources.
- We would complete the process with section 106 of the National Historic Preservation Act and implementing the regulations at 36 CFR 800 prior to allowing any construction to begin.
- We would ensure compliance with all mitigation measures that become conditions of the FERC authorizations and other approvals during our oversight of an environmental inspection and mitigation monitoring program.

In addition, we developed site-specific mitigation measures that Algonquin would implement to further reduce the environmental impacts that would otherwise result from construction and operation of its Project. We determined that these measures are necessary to reduce adverse impacts associated with the Project, and in part, are basing our conclusions on implementation of these measures. Therefore, we are recommending that these mitigation measures be attached as conditions to any authorization issued by the Commission. These recommended mitigation measures are presented in section 5.2 of the EIS.



## 1.0 INTRODUCTION

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On February 28, 2014, Algonquin Gas Transmission, LLC (Algonquin), an indirect wholly owned subsidiary of Spectra Energy Corporation (Spectra), filed an application with the Federal Energy Regulatory Commission (Commission or FERC) under sections 7(b) and 7(c) of the Natural Gas Act (NGA) and Part 157 of the Commission's regulations. The application was assigned Docket No. CP14-96-000 and a *Notice of Application* was issued on March 18, 2014<sup>1</sup> and noticed in the Federal Register on March 24, 2014. Algonquin is seeking a Certificate of Public Convenience and Necessity (Certificate) from the FERC to construct, abandon, install, own, operate, and maintain expansions of its existing interstate natural gas pipeline systems in New York, Connecticut, Rhode Island, and Massachusetts.

We<sup>2</sup> prepared this environmental impact statement (EIS) to assess the environmental impacts associated with construction and operation of the facilities proposed by Algonquin in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended. The U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), and U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) are cooperating agencies assisting in the preparation of the EIS because they have jurisdiction by law or special expertise with respect to environmental impacts associated with Algonquin's proposal. The roles of the FERC and the cooperating agencies in the project review process are described in section 1.2.

The vertical line in the margin identifies text that is new or modified in the final EIS and differs materially from corresponding text in the draft EIS. Changes were made to address comments from cooperating agencies and other stakeholders on the draft EIS; incorporate modifications to the Project proposed by Algonquin after publication of the draft EIS; and incorporate information filed by Algonquin in response to our recommendations in the draft EIS. As a result of the changes, 15 of the recommendations identified in the draft EIS are no longer applicable to the Project and do not appear in the final EIS. Additionally, three recommendations identified in the draft EIS have been substantively modified in the final EIS, and five new recommendations have been added in the final EIS.

Algonquin's proposal, referred to as the Algonquin Incremental Market Project (AIM Project or Project), involves the construction and operation of about 37.4 miles of natural gas pipeline and associated equipment and facilities in New York, Connecticut, and Massachusetts. The majority of the pipeline facilities (about 26.3 miles or 70 percent of the total 37.6 miles) would replace existing Algonquin pipelines, while the remainder of the pipeline facilities (about 11.1 miles or 30 percent) consists of new mainline pipeline, new loop pipeline, and one new lateral pipeline.

In addition to the pipeline facilities, Algonquin would modify 6 existing compressor stations and 24 existing metering and regulating (M&R) stations; construct 3 new M&R stations; and remove one existing M&R Station. Modifications to the six existing compressor stations include the installation of 81,620 total horsepower (hp) in Rockland and Putnam Counties, New York; New Haven, Middlesex, and Windham Counties, Connecticut; and Providence County, Rhode Island. Algonquin also proposes to abandon four existing compressor units for a total of 10,800 hp at one compressor station in Rockland County, New York. The 24 existing M&R station modifications include 3 in New York, 13 in Connecticut, and 8 in Massachusetts to accept the new gas flows associated with the proposed Project. The three new M&R stations to be constructed would be in Suffolk and Bristol Counties, Massachusetts.

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<sup>1</sup> An errata notice was issued on March 19, 2014 to clarify that the Commission staff is preparing an environmental impact statement for the Algonquin Incremental Market Project.

<sup>2</sup> The pronouns "we," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

and New London County, Connecticut. One M&R station would be decommissioned and removed in New London County, Connecticut. As part of the AIM Project, Algonquin would also modify facilities at three existing mainline valve (MLV) sites and five existing pig<sup>3</sup> launcher/receiver sites, and construct five new launcher/receiver sites, construct new MLV cross over piping at two locations, and construct a new MLV. Mainline regulation facilities would also be added at the terminus of one of the pipeline segments in New York.

## 1.1 PROJECT PURPOSE AND NEED

According to Algonquin, the purpose of the AIM Project is to expand its existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 dekatherms per day (Dth/d) of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets. Algonquin's stated objectives for the Project are:

- to provide the pipeline capacity necessary to transport additional natural gas supplies to meet the immediate and future load growth demands of local gas utilities in southern New England;
- eliminate capacity constraints on existing pipeline systems in New York State and southern New England;
- provide access to growing natural gas supply areas in the Northeast region to increase competition and reduce volatility in natural gas pricing in southern New England;
- improve existing compressor station emissions through the replacement of existing compressor units with new, efficient units; and
- provide the additional service by November 2016.

Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The FERC's Certificate Policy Statement<sup>4</sup> provides guidance as to how the Commission evaluates proposals for new construction, and establishes criteria for determining whether there is a need for a proposed project and whether it would serve the public interest. Decisions are based on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project. The Commission's goal is to give appropriate consideration to the enhancement of competitive transportation alternatives, the possibility of overbuilding, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain in evaluating new pipeline construction. The Commission does not direct the development of the gas industry's infrastructure regionally or on a project-by-project basis, or redefine an applicant's stated purpose.

<sup>3</sup> A pipeline "pig" is a device to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline.

<sup>4</sup> The Policy Statement can be found on our website at <http://www.ferc.gov/legal/maj-ord-reg/PL99-3-000.pdf>. Clarifying statements can be found by replacing "000" in the URL with "001" and "002."

Algonquin has executed precedent agreements<sup>5</sup> with 10 shippers, including 8 local distribution companies (LDCs) and two municipal utilities (collectively with the LDCs referred to as the Project Shippers) for firm transportation service to deliver new natural gas supplies to the Northeast region. The precedent agreements with the Project Shippers account for the entire Project capacity of 342,000 Dth/d. The 10 Project Shippers include:

- Yankee Gas Services Company (Yankee Gas);
- NSTAR Gas Company (NSTAR);
- Connecticut Natural Gas Corporation (Connecticut Natural Gas);
- The Southern Connecticut Gas Company (Southern Connecticut);
- The Narragansett Electric Company d/b/a National Grid (Narragansett Electric);
- Colonial Gas Company d/b/a National Grid (Colonial Gas);
- Boston Gas Company d/b/a National Grid (Boston Gas);
- Bay State Gas Company d/b/a Columbia Gas of Massachusetts, Inc. (Bay State);
- Norwich Public Utilities (NPU); and
- Middleborough Gas and Electric.

Noting the growing need for additional natural gas capacity in New England to help ensure electric generation system reliability, the Connecticut Department of Energy and Environmental Protection (CTDEEP) and New England States Committee on Electricity commented that the FERC should modify the scope of its NEPA analysis to include the Project both at its current size and for an alternative project of larger size such as the 433,000 Dth/d originally conceived by Algonquin. Algonquin reduced the scope of the AIM Project as a result of an open season. To follow the Certificate Policy Statement, Algonquin appropriately sized its proposal to ensure that there would be no subsidization from its existing shippers. The Commission analyzes a project as it is filed in an application and does not speculate on potential infrastructure. Additionally, the Commission cannot determine the environmental impacts of the larger version of the AIM Project without significantly more facility and siting information from Algonquin. Furthermore, the Commission has no authority to direct a pipeline company to construct facilities the company has deemed unnecessary for a project's objectives, which would be inefficient and costly.

Several comments were received during the scoping process and draft EIS comment period expressing concern that the Project would be used to export natural gas. Algonquin is not constructing the AIM Project for the purpose of supporting the export of natural gas from the United States. As discussed above, Algonquin is proposing to transport natural gas to meet the demand for natural gas in the Northeast U.S. markets. Specifically, Algonquin is proposing to construct the AIM Project based on commitments from the Project Shippers, which include LDCs and two municipal utilities, which have statutory, regulatory, and/or contractual obligations to serve natural gas customers within their respective service areas in New England. Even if precedent agreements were not in place for the entire proposed capacity, to be exported, the natural gas would need to be liquefied for transportation in specialized container ships to overseas markets. The process of liquefying the gas involves specialized equipment at a specific export facility. Currently, no existing operational export facilities or infrastructure exists on the east coast.<sup>6</sup> In addition, the timing and need as expressed through the precedent agreements greatly

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<sup>5</sup> A precedent agreement is a binding contract under which one or both parties has the ability to terminate the agreement if certain conditions such as receipt of regulatory approvals, are not met.

<sup>6</sup> On September 29, 2014, FERC issued an order granting authorization to Dominion to convert its existing Cove Point LNG import facility in Maryland to an export facility. However, it is not currently operational. The anticipated in-service date for the liquefied natural gas export terminal is June 2017. We also note that the AIM Project would flow gas in a northeast direction, away from the Cove Point LNG facility.



proceeds the development of any potential nearby export facility as the facilities take several years to develop, advance through the regulatory process, and be constructed.

Comments were also received asking whether any of the natural gas would be, or has the potential to be, liquefied and stored at existing or proposed liquefied natural gas (LNG) facilities. As indicated above, the AIM Project is designed to transport natural gas to serve the Project Shipper's load in the Northeast markets. No new LNG storage facilities are proposed, and the Project is not designed for the purpose of the export of natural gas. However, it is unknown whether the natural gas transported on the AIM Project facilities would be liquefied and stored in existing LNG storage facilities after the natural gas is delivered by Algonquin to the Project Shippers. It is possible that the Project Shippers could use existing peak shaving<sup>7</sup> LNG facilities, but those facilities are not export terminal facilities.

We also received several comments regarding facility design and siting for the proposed replacement, loop, and lateral pipelines and other facilities for the Project and why they need to be located as proposed. Algonquin states that the design and configuration of the proposed facilities is based on flow dynamics and the pressure of natural gas as it moves through the pipeline system relative to the delivery points requested by the Project Shippers. An analysis of the Project's facility design and siting alternatives is provided in section 3.4.

## **1.2 PURPOSE AND SCOPE OF THE EIS**

Our principal purposes for preparing the EIS are to:

- identify and assess the potential impacts on the natural and human environment that would result from the implementation of the proposed Project;
- describe and evaluate reasonable alternatives to the proposed Project that would avoid or minimize adverse effects on the environment;
- identify and recommend specific mitigation measures, as necessary, to minimize environmental impacts; and
- encourage and facilitate involvement by the public and interested agencies in the environmental review process.

The topics addressed in the EIS include alternatives; geology; soils; groundwater; surface waters; wetlands; vegetation; wildlife and aquatic resources; special status species; land use, recreation, special interest areas, and visual resources; socioeconomics (including transportation and traffic); cultural resources; air quality and noise; reliability and safety; and cumulative impacts. The EIS describes the affected environment as it currently exists, addresses the environmental consequences of the AIM Project, and compares the Project's potential impacts to those of the alternatives. The EIS also presents our conclusions and recommended mitigation measures for the Project.

We received comments that Marcellus shale production activity should be included in the scope of the proposed Project. The Project does not include the production of natural gas. The scope of this EIS focuses on the natural gas transmission facilities that Algonquin would construct and operate. Our authority under the NGA and NEPA review requirements relates only to natural gas facilities that are involved in interstate commerce. Thus, the facilities associated with the production of natural gas are not under FERC jurisdiction.

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<sup>7</sup> Peak shaving facilities store surplus natural gas to meet demand during high-use ("peak") consumption timeframes (e.g., winter cold snaps and summer heat waves).

Commentors also noted that the EIS should address the indirect impacts of induced Marcellus shale development. Impacts that may result from additional shale gas development are not “reasonably foreseeable” as defined by the Council on Environmental Quality (CEQ) regulations. Nor is such additional development, or any correlative potential impacts, an “effect” of the Project, as contemplated by the CEQ regulations, for purposes of a cumulative impact analysis. The development of the Marcellus shale, which is regulated by the states, continues to drive the need for takeaway interstate pipeline capacity to allow the gas to reach markets. Therefore, companies are planning and building interstate transmission facilities in response to this new source of gas supply. In addition, many production facilities have already been permitted and/or constructed in the region, creating a network through which natural gas may flow along various pathways to local users or the interstate pipeline system, including Algonquin’s existing system. Algonquin would receive natural gas through its interconnection with other natural gas pipelines. These interconnecting pipeline systems span multiple states with shale formations in the northeast, as well as conventional gas formations. We cannot estimate how much of the Project volumes would come from current/existing shale gas production and how much, if any, would be new production “attributable” to the Project.

We also note that the EPA and the states have imposed regulations within the past 2 to 3 years on natural gas production to minimize leaks and methane emissions. Therefore, past studies on production leaks and methane emissions cannot be used to appropriately predict future methane emissions. Predicting methane emissions and associated climate impacts is speculative given the newly required minimization efforts.

The Project does not depend on additional shale gas production that may occur for reasons unrelated to the Project and over which the Commission has no control, such as state permitting for additional gas wells. An overall increase in production of shale gas may occur for a variety of reasons, but the location and subsequent production activity is unknown and too speculative to assume based on the interconnected interstate natural gas pipeline system. Accordingly, the factors necessary for a meaningful analysis of when, where, and how shale gas development would occur are unknown at this time. It is simply impractical for this EIS to consider impacts associated with additional shale gas development in separate geographic areas than the proposed Project because cumulative impacts resulting from the Project must, under CEQ regulations, be meaningfully analyzed by this Commission.

We also received comments about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus shale region. Marcellus shale production and development of gas reserves are discussed in section 4.13.

Comments were also received regarding the AIM Project’s potential relationship to the Atlantic Bridge and Access Northeast Projects and possible improper project segmentation. Improper segmentation is usually concerned with projects that have reached the proposal stage, which is not the case here. Algonquin has not filed an application with the Commission for the Atlantic Bridge or Access Northeast Projects. Rather, Algonquin is still evaluating the potential Atlantic Bridge and Access Northeast Projects based on interest for additional natural gas supplies in New England and/or the Canadian Maritime provinces. The Atlantic Bridge and Access Northeast Projects are still in the development phase and precedent agreements are under consideration.

Even so, the AIM Project is an unconnected single action that has independent utility irrespective of any other projects, including the Atlantic Bridge and Access Northeast Projects. As discussed in section 1.1, Algonquin has executed precedent agreements with 10 shippers who account for the entire AIM Project capacity of 342,000 Dth/d. These are firm commitments needed to meet a discrete market in southern New England beginning in November 2016. Therefore, the scope of this EIS is limited to the AIM Project. However, section 4.13 of this EIS does address cumulative impacts of the Atlantic Bridge and Access Northeast Projects.

### **1.2.1 Federal Energy Regulatory Commission Purpose and Role**

The FERC is an independent federal agency responsible for evaluating applications for authorization to construct and operate interstate natural gas pipeline facilities. If the Commission determines that a project is required by the public convenience and necessity, Certificates are issued under sections 7(b) and 7(c) of the NGA and Part 157 of the Commission's regulations. As such, the FERC is the lead federal agency for the preparation of the EIS in compliance with the requirements of NEPA, the CEQ regulations for implementing the procedural provisions of NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500-1508 [40 CFR 1500-1508]), and the FERC's regulations implementing NEPA (18 CFR 380).

This EIS presents our review of potential environmental impacts and reasonable recommendations to avoid or mitigate impacts. This EIS will be used as an element in the Commission's review of the Project to determine whether a Certificate would be issued. The FERC will also consider non-environmental issues in its review of Algonquin's application. A Certificate will be granted if the Commission finds that the evidence produced on financing, rates, market demand, gas supply, existing facilities and service, environmental impacts, long-term feasibility, and other issues demonstrates that the Project is required by the public convenience and necessity. Environmental impact assessment and mitigation development are important factors in the overall public interest determination.

### **1.2.2 U.S. Environmental Protection Agency Purpose and Role**

The EPA is an independent federal agency responsible for protecting human health and safeguarding the natural environment. The EPA has delegated water quality certification, under section 401 of the Clean Water Act (CWA), to the jurisdiction of individual state agencies. The EPA may assume section 401 authority if no state program exists, if the state program is not functioning adequately, or at the request of the state. The EPA also oversees the issuance of a National Pollutant Discharge Elimination System (NPDES) permit by the state agency, under section 402 of the CWA, for point-source discharge of water used for hydrostatic testing of pipelines into waterbodies. The EPA also has the authority to review and veto permits issued by the USACE under section 404 of the CWA. In addition to its authority under the CWA, the EPA also has jurisdictional authority under the Clean Air Act (CAA) to control air pollution by developing and enforcing rules and regulations for all entities that emit toxic substances into the air. Under this authority, the EPA has developed regulations for major sources of air pollution, and has delegated the authority to implement these regulations to state and local agencies. State and local agencies are allowed to develop and implement their own regulations for non-major sources of air pollutants. The EPA also establishes general conformity applicability thresholds that a federal agency can utilize to determine whether a specific action requires a general conformity assessment.

In addition to its permitting responsibilities, the EPA is required under section 309 of the CAA to review and publicly comment on the environmental impacts of major federal actions including actions that are the subject of draft and final EISs, and is responsible for implementing certain procedural provisions of NEPA (e.g., publishing Notices of Availability of the draft and final EISs in the Federal Register) to establish statutory timeframes for the environmental review process.

### **1.2.3 U.S. Army Corps of Engineers Purpose and Role**

The USACE is a federal agency within the U.S. Department of Defense with jurisdictional authority pursuant to section 404 of the CWA (Title 33 of the United States Code [USC], Section 1344 [33 USC 1344]), which governs the discharge of dredged or fill material into waters of the United States, and section 10 of the Rivers and Harbors Act (RHA) (33 USC 403), which regulates any work or structures that potentially affect the navigable capacity of a waterbody. Because the USACE would need to evaluate and approve several aspects of the Project and must comply with the requirements of NEPA before issuing permits under the above statutes, it has elected to participate as a cooperating agency in the

preparation of this EIS. The USACE would adopt the EIS per 40 CFR 1506.3 if, after an independent review of the document, it concludes that the EIS satisfies the USACE's comments and recommendations. The Project occurs within the New York and New England Districts of the USACE.

The primary decisions to be addressed by the USACE include:

- issuance of a section 404 permit for aquatic resource impacts associated with construction of the Project; and
- issuance of section 10 permit for construction activities within navigable waters of the United States.

This EIS contains information needed by the USACE to reach decisions on these issues. Through the coordination of this document, the USACE would obtain the views of the public and natural resource agencies prior to reaching decisions on the Project.

Algonquin submitted applications for section 404/10 permits to the New York and New England Districts on March 21 and March 25, 2014, respectively. The USACE published public notices for Algonquin's applications in the Federal Register on August 14, 2014 (New York) and August 19, 2014 (New England), concurrent with the draft EIS and the FERC public comment period. As an element of its review, the USACE must consider whether a proposed project avoids, minimizes, and compensates for impacts on existing aquatic resources, including wetlands, to strive to achieve a goal of no overall net loss of values and functions. Based on its participation as a cooperating agency and its consideration of the final EIS (including responses to public comments), the USACE would issue a Record of Decision to formally document its decision on the proposed action, including section 404 (b)(1) analysis and required environmental mitigation commitments.

#### **1.2.4 U.S. Department of Transportation – Pipeline and Hazardous Materials Safety Administration**

PHMSA is the federal agency responsible for administering the national regulatory program to ensure the safe transportation of natural gas, petroleum, and other hazardous materials by pipeline under 49 USC Chapter 601. PHMSA's Office of Pipeline Safety (OPS) develops regulations and other approaches to risk management to ensure safety in design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. The OPS is responsible for ensuring that Algonquin's proposed facilities are designed, constructed, and operated in compliance with the safety standards that the agency has established for natural gas pipeline facilities.

### **1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS**

As the lead federal agency for the AIM Project, the FERC is required to comply with section 7 of the Endangered Species Act of 1973 (ESA), the Migratory Bird Treaty Act (MBTA), the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA), the RHA, the CWA, the CAA, section 106 of the National Historic Preservation Act (NHPA), and section 307 of the Coastal Zone Management Act of 1972 (CZMA). These and other statutes have been taken into account in the preparation of the EIS.

Table 1.3-1 lists the major federal, state, and local permits, approvals, and consultations for construction and operation of the Project. The table also provides each status. The FERC encourages cooperation between applicants and state and local authorities, but this does not mean that state and local agencies, through applications of state and local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by the FERC. Any state or local permits issued with respect to jurisdictional facilities must be consistent with the conditions of any authorization issued by the FERC.

TABLE 1.3-1			
Major Permits, Approvals, and Consultations for the AIM Project <sup>a</sup>			
Agency	Permit/Approval/ Consultation	Agency Action	Status
<b>Federal</b>			
FERC	Certificate	Consider issuance of a Certificate under sections 7(b) and (c) of the NGA.	Application filed February 28, 2014
USACE	Section 404, CWA Permit	Issuance of a section 404 permit for discharges of dredged or fill material into waters of the United States, including jurisdictional wetlands.	Applications filed March 21, 2014 (New York District; March 25, 2014 (New England District)
<ul style="list-style-type: none"> <li>New England District</li> <li>New York District</li> </ul>			
	Section 10 RHA Permit	Issuance of a section 10 permit for structures or work in or affecting navigable waters of the United States.	Application filed March 21, 2014 (only applicable to New York District)
EPA	Section 404, CWA	Review CWA, section 404 wetland dredge-and-fill applications to the USACE with 404(c) veto power for wetland permits issued by the USACE.	Consultation through the USACE process
<ul style="list-style-type: none"> <li>Region 1 (New England)</li> <li>Region 2 (New York)</li> </ul>	CAA	Determination of General Conformity applicability. Review and publicly comment on the environmental impacts of major federal actions.	Ongoing
National Oceanic and Atmospheric Administration's National Marine Fisheries Service	Section 7 ESA Consultation	Finding of impacts on federally listed or proposed threatened and endangered (T&E) marine species and their habitat.	Complete
	MSA Consultation	Assess impacts and provide comments to prevent loss of and damage to essential fish habitat.	Complete
U.S. Fish and Wildlife Service	Section 7 ESA Consultation, Biological Opinion	Finding of impacts on federally listed or proposed species. Provide Biological Opinion if the Project is likely to adversely affect federally listed or proposed species or their habitats.	Complete
<ul style="list-style-type: none"> <li>New England Field Office</li> <li>New York Field Office</li> </ul>	Fish and Wildlife Coordination Act	Provide comments to prevent loss of and damage to wildlife resources.	Complete
	MBTA	Provide comments to prevent taking or loss of habitat for migratory birds.	Complete
Advisory Council on Historic Preservation	Section 106 Consultation, NHPA	Comment on the Project and its effects on historic properties.	Ongoing
<b>State of New York <sup>b</sup></b>			
New York State Department of Environmental Conservation (NYSDEC), Division of Environmental Permits	Section 401, CWA	Issuance of Water Quality Certification (WQC).	Application filed April 10, 2014
		Consultation with Freshwater Wetlands, and Protection of Waters.	Consultations concurrent with WQC review

TABLE 1.3-1 (cont'd)			
Major Permits, Approvals, and Consultations for the AIM Project <sup>a</sup>			
Agency	Permit/Approval/ Consultation	Agency Action	Status
NYSDEC, Division of Water Permits	State Pollution Discharge Elimination System (SPDES) Program	Issuance of SPDES Permit for Hydrostatic Test Water Discharge and Trench Dewatering.	Application filed April 10, 2014
		Issuance of SPDES Construction Stormwater General Permit; Stormwater Pollution Prevention Plan (SWPPP).	SWPPP filed December 2014
NYSDEC, Division of Fish, Wildlife and Marine Resources (DFWMR), Natural Heritage Program	New York State T&E Species Program	Consultation on state-listed T&E species.	Ongoing
NYSDEC, DFWMR Bureau of Wildlife and Fisheries	New York State T&E Species Program	Consultation on state-listed T&E species.	Consultation ongoing
NYSDEC, Division of Air Resources	CAA	Issuance of air permits for compressor station modifications.	Applications filed February 28, 2014 (Southeast Compressor Station) and March 3, 2014 (Stony Point Compressor Station)
New York State Department of State, Office of Communities & Waterfronts	Coastal Zone Consistency Program	Review Project for consistency with coastal zone plans and issue determination.	Consistency determination received September 2, 2014
New York State Office of General Services, Real Estate Development – Land Management	Public Lands Law	Issuance of easement for use of lands underwater.	Application to be filed 1 <sup>st</sup> quarter 2015
New York State Office of Parks, Recreation and Historic Preservation (OPRHP), Historic Preservation Field Services Bureau	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
OPRHP	New York State Parks Program	Consultation on potential encroachment on state lands.	Ongoing
<b>Local</b>			
New York City Department of Environmental Protection, Bureau of Environmental Planning and Assessment	Geotechnical Investigations	Issuance of permit to conduct geotechnical investigations at the Catskill Aqueduct crossing.	Permit issued August 22, 2014
	Land Use Permit	Issuance of permit to cross the Catskill Aqueduct.	Application to be filed 1 <sup>st</sup> quarter 2015
		SWPPP and erosion and sediment control.	SWPPP filed December 2014
Westchester and Rockland Counties	County Lands	Consultation regarding encroachment across county lands.	Ongoing

TABLE 1.3-1 (cont'd)

**Major Permits, Approvals, and Consultations for the AIM Project <sup>a</sup>**

Agency	Permit/Approval/ Consultation	Agency Action	Status
<b>Connecticut</b>			
CTDEEP, Bureau of Water Protection and Land Reuse	Section 401, CWA	Review and issuance of WQC.	Application filed March 28, 2014
	Inland Wetlands and Watercourses	Review and issuance of permit for wetland and waterbody crossings.	Application filed March 28, 2014
	Hydrostatic test water discharge (section 22a- 430b of the Connecticut General Statutes)	Issuance of General Permit for Discharge of Hydrostatic Test Water.	Permits received October 10, 2014
	Stormwater discharge (section 22a-430b of the Connecticut General Statutes)	Issuance of General Permit for Discharges of Stormwater and Dewatering Wastewater from Construction Activities.	Application to be filed 1 <sup>st</sup> quarter 2015
CTDEEP, Bureau of Natural Resources, Wildlife Division, Natural Diversity Database	Connecticut T&E Species Program	Consultation on state-listed T&E species.	Ongoing
CTDEEP, Bureau of Natural Resources, Inland Fisheries Division	Connecticut T&E Species Program	Consultation on inland fisheries.	Ongoing
CTDEEP, Bureau of Air Management	CAA	Issuance of air permits for compressor station modifications.	Applications filed January 31, 2014 (Chaplin Compressor Station) and February 4, 2014 (Cromwell Compressor Station)
CTDEEP, Connecticut Siting Council	Facility Siting	Review and certification of energy facilities through the FERC process.	Ongoing
Connecticut Commission on Culture and Tourism	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
Connecticut Indian Affairs Council	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
<b>Local</b>			
Municipalities	Inland Wetlands and Watercourses - Wetland Permit (sections 22a-36 through 22a-45a of the Connecticut General Statutes)	Consultation on waterways and wetlands.	Copy of section 401 permit application provided on April 14, 2014
<b>Rhode Island</b>			
Rhode Island Department of Environmental Management (RIDEM), Bureau of Environmental Protection, Office of Water Resources	Stormwater Discharge	Issuance of Stormwater General Permit for Construction Activities.	Application to be filed 1 <sup>st</sup> quarter 2015



TABLE 1.3-1 (cont'd)

**Major Permits, Approvals, and Consultations for the AIM Project <sup>a</sup>**

Agency	Permit/Approval/ Consultation	Agency Action	Status
	Rhode Island Pollutant Discharge Elimination System	Issuance of Waste Water Discharge Permit for Hydrostatic Test Water.	Application to be filed 1 <sup>st</sup> quarter 2015
RIDEM, Bureau of Environmental Protection, Office of Air Resource	CAA	Issuance of air permit for compressor station modifications.	Application filed February 3, 2014
Rhode Island Division of Planning and Development, Natural Heritage Program	Rhode Island T&E Species Program	Consultation on state-listed T&E species.	Complete
Rhode Island Historical Preservation & Heritage Commission	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
<b>Massachusetts</b>			
Massachusetts Executive Office of Energy and Environmental Affairs (MAEOEEA), Massachusetts Environmental Protection Act (MEPA) Office	MEPA Certificate	Issuance of certificate for compliance with MEPA. March 31, 2014 decision that no further MEPA review required.	Complete
MAEOEEA, Office of Coastal Zone Management	Coastal Zone Consistency Program	Review Project for consistency with coastal zone plans and issue determination.	Application filed January 2014; consistency determination received February 6, 2014
Massachusetts Department of Environmental Protection	Section 401, CWA	Review and issuance of WQC.	Application filed April 11, 2014
Massachusetts Department of Transportation	Work within roadways	Review and issuance of permits and plans for construction within state road rights-of-way.	Application to be filed 1 <sup>st</sup> quarter 2015
Massachusetts Energy Facility Siting Board	Facility Siting	Review and comment on FERC-regulated energy projects.	Ongoing
Massachusetts Division of Wildlife and Fisheries; Natural Heritage and Endangered Species Program	Massachusetts T&E Species Program	Consultation on state-listed T&E species.	Complete
Massachusetts Historical Commission	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
Massachusetts Commission on Indian Affairs	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
Massachusetts Board of Underwater Archaeological Resources	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
Massachusetts Department of Conservation and Recreation	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing

TABLE 1.3-1 (cont'd)			
Major Permits, Approvals, and Consultations for the AIM Project <sup>a</sup>			
Agency	Permit/Approval/ Consultation	Agency Action	Status
<b>Local</b>			
Local Municipal Conservation Commissions	Massachusetts Wetlands Protection Act	Review and issue Order of Conditions for wetlands.	Applications to be filed 1 <sup>st</sup> quarter 2015
Municipal Historical Commissions	Section 106, NHPA	Review and comment on the Project and its effects on historic properties.	Ongoing
<sup>a</sup> Consultations with Native American tribes are discussed in section 4.10.2. <sup>b</sup> The Project is not subject to New York's State Environmental Quality Review Act because it is subject to the federal NGA and, therefore, is reviewed under the NEPA.			

### 1.3.1 Endangered Species Act

Section 7 of the ESA, as amended, states that any project authorized, funded, or conducted by any federal agency (e.g., FERC) should not "...jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined...to be critical..." (16 USC Section 1536(a)(2)(1988)). The FERC, or Algonquin as a non-federal party, is required to consult with the U.S. Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NOAA Fisheries) to determine whether any federally listed or proposed endangered or threatened species or their designated critical habitat occur in the vicinity of the Project. If the FERC determines that these species or habitats may be impacted by the Project, the FERC is required to prepare a biological assessment (BA) to identify the nature and extent of adverse impact, and to recommend measures to avoid or reduce potential impacts on habitat and/or species. If, however, the FERC determines that no federally listed or proposed endangered or threatened species or their designated critical habitat would be impacted by the Project, no further action is necessary under the ESA. See section 4.7.1 of this EIS for the status of our compliance with section 7 of the ESA.

### 1.3.2 Migratory Bird Treaty Act

Migratory birds are species that nest in the United States and Canada during the summer and then migrate south to the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the MBTA (16 USC 703–711; MBTA). Executive Order (EO) 13186 (66 Federal Register 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the FWS. EO 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and that particular focus should be given to addressing population-level impacts.

On March 30, 2011, the FWS and the Commission entered into a *Memorandum of Understanding Between the Federal Energy Regulatory Commission and the U.S. Department of the Interior United States Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds"* (MBTA MOU) that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies. See section 4.7.2 of this EIS for the status of our compliance with the MBTA.

### **1.3.3 Magnuson-Stevens Fishery Conservation Management Act**

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a federal fisheries management plan. The MSA requires federal agencies to consult with NOAA Fisheries on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely impact EFH (MSA section 305(b)(2)). Although absolute criteria have not been established for conducting EFH consultations, NOAA Fisheries recommends consolidating EFH consultations with interagency coordination procedures required by other statutes such as NEPA, the Fish and Wildlife Coordination Act, or the ESA (50 CFR 600.920(e)) in order to reduce duplication and improve efficiency. As part of the consultation process, we have prepared an EFH Assessment included in section 4.6.2.4.

### **1.3.4 Rivers and Harbors Act**

The RHA pertains to activities in navigable waters as well as harbor and river improvements. Section 10 of the RHA prohibits the unauthorized obstruction or alteration of any navigable water of the United States. Construction of any structure or the accomplishment of any other work affecting course, location, condition, or physical capacity of waters of the United States must be authorized by the USACE. The only section 10 river crossed by the Project is the Hudson River. The Hudson River crossing is discussed in detail in section 4.3.2.

### **1.3.5 Clean Water Act**

The CWA, as amended, regulates the discharges of pollutants into waters of the United States and regulates quality standards for surface waters. To enact this goal both the EPA and the USACE have regulatory authority under this statute. The EPA has implemented pollution control programs including setting wastewater standards for industry and creating water quality standards for all contaminants in surface waters. Under the CWA, it is unlawful to discharge any pollutant from a point source into waters of the United States without a permit. The EPA operates the NPDES permit program that regulates discharges by industrial, municipal, and other facilities, if discharges directly enter surface waters. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States and is under jurisdiction of the USACE. The status of NPDES and section 404 permitting requirements are further addressed in sections 4.3.2 and 4.4.3 of this EIS.

Section 401 of the CWA requires that an applicant for a federal permit who conducts any activity that may result in a discharge to waters of the United States must provide the federal regulatory agency with a section 401 certification. Section 401 certifications are made by the state in which the discharge originates and declares that the discharge would comply with applicable provisions of the act, including the state water quality standards. The New York State Department of Environmental Conservation (NYSDEC), CTDEEP, and Massachusetts Department of Environmental Protection (MADEP) are the applicable regulatory authorities delegated with section 401 certification for the states of New York, Connecticut, and Massachusetts. A section 401 certification is not required for the modifications proposed in Rhode Island.

### **1.3.6 Clean Air Act**

The CAA, as amended, defines the EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. Under the CAA, the EPA sets limits on certain air pollutants and grants them the authority to limit emissions of air pollutants coming from sources such as industrial facilities. The EPA has delegated the authority to implement these regulations to state and local agencies. In New York, the NYSDEC is responsible for enforcement of air quality standards at a state level as well as enforcement of the State Implementation Plan (SIP) required under the CAA. In

Connecticut, the CTDEEP is responsible for enforcement of air quality standards at a state level as well as enforcement of the SIP required under the CAA. In Rhode Island, the Rhode Island Department of Environmental Management (RIDEM) is responsible for enforcement of air quality standards at a state level as well as enforcement of the SIP required under the CAA. In Massachusetts, the MADEP is responsible for enforcement of air quality standards at a state level as well as enforcement of the SIP required under the CAA. The EPA issued a rule in 2010 finalizing greenhouse gas (GHG) reporting requirements for the petroleum and natural gas industry (40 CFR 98). New York, Connecticut, Rhode Island, and Massachusetts have each modified their respective SIPs to regulate GHGs and issue permits for GHGs for large and modified sources under the Prevention of Significant Deterioration (PSD) program. See section 4.11.1 of this EIS for additional information regarding our compliance with the CAA and SIPs.

### **1.3.7 National Historic Preservation Act**

Section 106 of the NHPA, as amended, requires the FERC to take into account the impacts of its undertakings on historic properties, and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Historic properties include prehistoric or historic sites, districts, buildings, structures, objects, or properties of traditional religious or cultural importance listed in or eligible for listing in the National Register of Historic Places (NRHP). In accordance with the ACHP's regulations for implementing section 106, at 36 CFR 800.2(a)(3), the FERC is using the services of Algonquin and its consultants to prepare information, analyses, and recommendations. However, we remain responsible for all findings and determinations. We will follow the process of complying with Section 106 outlined in Part 800 by consulting with each state's State Historic Preservation Office (SHPO), identifying historic properties in the area of potential effect (APE), and assessing potential project effects. Section 4.10.4 of this EIS summarizes the status of our compliance with the NHPA.

### **1.3.8 Coastal Zone Management Act**

The CZMA calls for the "effective management, beneficial use, protection, and development" of the nation's coastal zone and promotes active state involvement in achieving those goals. As a means to reach those goals, the CZMA requires participating states to develop management programs that demonstrate how these states would meet their obligations and responsibilities in managing their coastal areas. In New York, the New York State Department of State (NYSDOS), Office of Communities and Waterfronts is the agency responsible for administering its Coastal Zone Management Program (CZMP). In Massachusetts, the responsible agency is the Massachusetts Executive Office of Energy and Environmental Affairs (MAEOEEA), Office of Coastal Zone Management (MACZM). The coastal zone would not be affected by the Project in Connecticut or Rhode Island. Because section 307 of the CZMA requires federal agency activities to be consistent to the maximum extent practicable with the enforceable policies of a management program, the FERC has requested that Algonquin seek a determination of consistency with New York's and Massachusetts's CZMPs. On February 6, 2014, MACZM determined that due to the limited nature of the work in Massachusetts, the Project falls below the threshold requiring federal consistency. On September 2, 2014, Algonquin received its consistency certification from NYSDOS. Section 4.8.4 of this EIS summarizes our compliance with the CZMA.

## **1.4 PUBLIC REVIEW AND COMMENT**

On June 18, 2013, Algonquin filed a request with the FERC to implement the Commission's NEPA pre-filing process for the AIM Project. The purpose of the pre-filing process is to encourage early involvement of interested stakeholders, facilitate interagency cooperation, and identify and resolve issues before an application is filed with the Commission. On June 28, 2013, the FERC granted Algonquin's request and established a pre-filing Docket Number (PF13-16-000) to place information related to the Project into the public record.

Prior to entering the pre-filing process, Algonquin began conducting outreach activities with governmental stakeholders in the fall of 2012 and landowners in early 2013. In April and May 2013, Algonquin held six landowner informational meetings in New York, four in Connecticut, and two in Rhode Island to acquaint landowners and public officials with the Project and to gather input. After entering the pre-filing process, Algonquin held one additional landowner informational meeting in Connecticut and two in Massachusetts in July 2013.

In conjunction with the pre-filing process, Algonquin implemented a Public and Agency Participation Plan to identify stakeholders, share information regarding the Project, seek input on environmental and other issues, and provide opportunities for public comment. As part of its plan, Algonquin communicated with landowners; elected officials and staff; community leaders; federal, state, and local agencies; non-governmental organizations; local businesses; nearby residents; civic organizations; and other interested individuals and organizations. Algonquin used direct mail to provide information on the AIM Project to stakeholders and established a toll-free Project hotline and targeted Project page on the Spectra website. The website includes a Project description and overview map, information on the FERC's environmental review process, and contact information for the AIM Project.

In May 2013, Algonquin wrote to nine federally recognized Indian tribes (the Delaware Nation of Oklahoma, Delaware Tribe of Indians, Mashantucket (Western) Pequot Tribal Nation, Mashpee Wampanoag Indian Tribe, Mohegan Indian Tribe, Narragansett Indian Tribe, Saint Regis Mohawk Tribe, Stockbridge-Munsee Community Band of Mohican Indians, and Wampanoag Tribe of Gay Head (Aquinnah)) to provide an opportunity to identify any concerns about properties of traditional religious or cultural significance that may be affected by this undertaking. In November 2013, the FERC wrote letters to the federally recognized tribes to request their comments on the proposed Project. Additional information on outreach to tribes is provided in section 4.10.1.3.

Algonquin held 10 public open house meetings in August and September 2013, including 4 in New York, 3 in Connecticut, 2 in Rhode Island, and 1 in Massachusetts, to provide information on the AIM Project and solicit feedback from stakeholders on environmental issues and other concerns. We participated in these open house meetings, provided information on the Commission's environmental review process for the AIM Project, and took comments about the Project and the alternatives.

We participated in interagency meetings, conference calls, and site visits for the AIM Project to identify issues to be addressed in this draft EIS. The meetings, conference calls, and site visits provided a forum for the exchange of information and supported the FERC's responsibility to coordinate federal authorizations and associated environmental review of the AIM Project. Additionally, we hosted 20 regular conference calls with Algonquin and other agencies to discuss AIM Project status and issues. We also hosted regular (mostly weekly) conference calls with tribes, Algonquin, and Algonquin's cultural resources consultant to discuss schedule and coordination for pending cultural resources field investigations. Summaries of the meetings and calls are available for viewing on the FERC's eLibrary website ([www.ferc.gov](http://www.ferc.gov)).<sup>8</sup>

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<sup>8</sup> Public meeting transcripts and comment letters are available for viewing on the FERC website (<http://www.ferc.gov>). Using the "eLibrary" link, select "General Search" from the eLibrary menu, enter the selected date range and "Docket No." excluding the last three digits (i.e., PF13-16 or CP14-96), and follow the instructions. For assistance, call 1-866-208-3676, or e-mail [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov). Because scoping was conducted during the pre-filing review (i.e., before Algonquin filed a formal application with the FERC), PF13-16 must be entered in the Docket No. field to view the public scoping transcripts and comment letters. To view information available after Algonquin's application was filed, including the transcripts of the comment meetings on the draft EIS, CP14-96 must be entered in the Docket No. field.

On September 13, 2013, the FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Algonquin Incremental Market Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings* (NOI). The NOI was published in the Federal Register on September 19, 2013, and copies were mailed to over 1,800 parties, including representatives of federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; other interested parties; and local libraries and newspapers. The NOI described the FERC's environmental review process for the AIM Project; provided a preliminary list of issues for review in this draft EIS; requested written comments from the public on the scope of the draft EIS; announced the time and location of public scoping meetings; and invited other federal, state, and local agencies to participate as cooperating agencies in the preparation of the EIS. The NOI opened the public scoping period and established a closing date of October 15, 2013 for receiving scoping comments.

The FERC held four public scoping meetings in the AIM Project area to solicit and receive comments on environmental issues associated with this Project. The meetings were held September 30, 2013 through October 3, 2013 in the Town of Cortlandt, New York; Danbury, Connecticut; Norwich, Connecticut; and the Town of Dedham, Massachusetts. The scoping meetings provided an opportunity for the public to learn more about the proposed AIM Project and to provide comments on environmental issues to be addressed in this draft EIS. A combined total of 31 individuals provided verbal comments at the scoping meetings. Transcripts of the meetings, as well as 579 unique written comment letters, were entered into the public record and are available for viewing on the FERC's eLibrary website ([www.ferc.gov](http://www.ferc.gov)).

On August 6, 2014, we issued a *Notice of Availability of the Draft Environmental Impact Statement for the Proposed Algonquin Incremental Market Project*. This notice, which was published in the Federal Register, listed the dates and locations of public comment meetings and established a closing date of September 29, 2014 for receiving comments on the draft EIS. Copies of the draft EIS were mailed to over 2,740 stakeholders. The EPA noticed receipt of the draft EIS in the Federal Register on August 15, 2014.

We held five public comment meetings in the AIM Project area to solicit and receive comments on the draft EIS. The meetings were held between September 8 and September 16, 2014 in the Town of Dedham, Massachusetts; Norwich, Connecticut; Danbury, Connecticut; the Town of Cortlandt, New York; and the Town of Mapleville, Rhode Island. The meetings provided the public an opportunity to present oral comments on the analysis of environmental impacts described in the draft EIS. A combined total of approximately 692 individuals attended these comment meetings, including 143 who provided oral comments. We also received 352 individual comment letters from federal, state, and local agencies; companies/organizations; and individuals in response to the draft EIS prior to the close of the comment period on September 29, 2014. Eleven of the comment letters are form letters or petitions submitted or signed by multiple individuals. We also continued to accept comment letters for 2 weeks past the close of the comment period. Those letters received through October 10, 2014 included an additional 132 individual comment letters from federal, state, and local agencies; companies/organizations; and individuals and are included in our comment responses contained in Volume II.<sup>9</sup> Letters received after October 10, 2014 continued to be posted to the eLibrary site and were reviewed by staff for additional new substantive concerns, but are not included in Volume II because no new issues were raised that were not already addressed in previous comment letters. Transcripts from the public comment meetings, as

<sup>9</sup> Each comment letter received through October 10, 2014 has been scanned and sorted by commentor type (i.e., federal agencies, Native American tribes, state agencies, local agencies, companies and organizations, form letters, individuals, public meetings, and applicant). The comments within each letter or transcript have been coded and a response to each comment provided side-by-side with the scanned letter. The letters and responses are included in Volume II of the EIS.

well as the written comment letters, were entered into the public record and are available for viewing on the FERC's eLibrary website ([www.ferc.gov](http://www.ferc.gov)).

Concurrent with the production of the draft EIS and after its publication, Algonquin continued to conduct public outreach efforts in the Project area. As of October 23, 2014, Algonquin had hosted and/or attended 20 meetings with various agencies, landowner groups, stakeholders, and/or the public, including:

- 5 meetings in New York between September 5 and October 6, 2014 with the public and/or various representatives of the Town of Cortlandt, the Village of Buchanan, and the Hendrick Hudson school district;
- 2 meetings in Connecticut, including an October 6, 2014 meeting with the Town Manager and Mayor of the Town of Cromwell, and an October 23, 2014 meeting with Mohegan Tribal representatives; and
- 13 meetings in Massachusetts between July 8 and October 23, 2014 with the public and/or various representatives from the Massachusetts Water Resources Authority, Town of Dedham, Dedham Town Hall, Dedham Parks and Recreation Department, Town of Dedham Board of Selectman, Legacy Place Shopping Center and National Amusement, Town of Westwood, City of Boston, Boston City Council, West Roxbury Community, West Roxbury Saves Energy Steering Committee, and Massachusetts Department of Transportation (MassDOT).

This EIS addresses all substantive comments submitted to the FERC or made at the open houses, scoping meetings, interagency meetings, and comment meetings on the draft EIS. Table 1.4-1 lists the environmental issues and concerns identified by commentors during the scoping and comment process and identifies the section of the EIS where the issue is addressed.

Numerous commentors expressed support for the AIM Project, primarily due to the potential local employment opportunities that would be generated by the Project. However, many commentors expressed opposition to the Project. Health and safety concerns, the Project's purpose and need, impacts on air quality, and a preference for conservation and renewable energy sources were common objections. Other concerns included cumulative environmental impacts; concerns about the environmental review process; emergency response infrastructure capacity; and impacts on water resources, wetlands, vegetation, and wildlife.

Copies of this final EIS have been mailed to the agencies, individuals, organizations, and other parties identified in the distribution list provided as appendix A. Additionally, the final EIS has been filed with the EPA for issuance of a formal Notice of Availability in the Federal Register. In accordance with the CEQ's regulations implementing NEPA, no agency decision on the proposed actions may be made until 30 days after the EPA publishes the Notice of Availability in the Federal Register. However, the CEQ regulations provide an exception to this rule when an agency decision is subject to a formal internal appeal process that allows other agencies or the public to make their views known. This is the case at the FERC, where any Commission decision on the proposed action would be subject to a 30-day rehearing period. Therefore, the FERC decision may be made and recorded concurrently with the publication of the final EIS or any time thereafter.



TABLE 1.4-1 Issues Identified and Comments Received for the AIM Project	
Issue/Specific Comment	EIS Section Addressing Comment
<b>General</b>	
Potential for export of gas transported by the Project and the connection to any new or existing LNG facilities	1.1
Plans for abandonment of the pipeline segments that are being replaced	2.3.1.2
Discussion of regional/local need for capacity increase provided by the Project	1.1
Project segmentation	1.2
<b>Alternatives</b>	
Consideration of alternative routes to avoid populated areas, sensitive resources, Indian Point Nuclear Facility, Hudson River, and Catskill Aqueduct	3.0
Consideration of alternate design with larger pipe diameter/higher capacity	3.4
Consideration of energy conservation and renewable energy alternatives	3.2
<b>Geology</b>	
Potential Project implications of a seismic risk (i.e., Ramapo Fault)	4.1.5.1
Additive impact of blasting practices near existing quarry in West Roxbury, Massachusetts, within in the New York City Watershed, and Catskill Aqueduct	4.1.4, 4.1.6, 4.3.2, appendix E
<b>Soils</b>	
Associated protocols and/or assessment procedures for the discovery of contaminated soils during construction	4.2.2.6
<b>Water Resources</b>	
Impacts of horizontal directional drill (HDD) crossings, including inadvertent releases of drilling mud, drilling spoil management and disposal, and navigation channels	4.3.2, 4.3.2.6, appendix J
Assess the potential of wastewater radioactivity near Indian Point	4.3.1.6
Impacts on New York City drinking water supply and associated facilities (e.g., Catskill Aqueduct, New Croton Reservoir, Amawalk Reservoir)	4.3.2.1, 4.3.2.6
<b>Wetlands</b>	
Impacts on wetlands, including dredging, filling, clearing, and cover type conversion and proposed mitigation	4.4, appendices K and M
Secondary impacts on and site-specific crossing plans for vernal pools	4.4.3
<b>Vegetation</b>	
Impacts on the removal of trees, including restoration/mitigation plans	4.5
Noxious weeds and invasive species management	4.5.2
Revegetation success and monitoring	4.5
<b>Wildlife and Aquatic Resources</b>	
Assess the impacts on Hudson River aquatic life, habitat in the Blue Mountain Reservation and Croton-to-Highlands biodiversity corridor (Westchester County)	4.6.1, 4.6.2, 4.7
<b>Special Status Species</b>	
Evaluation of potential impacts on threatened or endangered species and their habitat including rare plants and proposed avoidance and/or mitigation measures	4.7
<b>Land Use</b>	
Impacts on future development plans (e.g., West Point Partners, LLC's West Point Transmission Project)	4.8.3
Impacts on residential, farmland, recreational, and special interest areas (e.g., Blue Mountain Reservation) during construction and operation	4.8.1
Visual impacts of aboveground facilities	4.8.7.3
Site-specific details for construction near St. Patrick's Church and the Buchanan-Verplanck Elementary School	4.8.5.1

TABLE 1.4-1 (cont'd)	
Issues Identified and Comments Received for the AIM Project	
Issue/Specific Comment	EIS Section Addressing Comment
<b>Socioeconomics</b>	
Local employment opportunities and increased tax revenues	4.9.1, 4.9.8
Assessment of impacts on local energy and home heating costs	4.9.8
Construction traffic impacts around Legacy Place Shopping Center, along the West Roxbury Lateral, and in the Village of Buchanan	4.9.5
Impacts on property values in the vicinity of the Project	4.9.8
Impacts on, and alternative public outreach methods for, environmental justice communities	4.9.10
<b>Cultural Resources</b>	
Impacts on culturally and historically significant properties	4.10.4
Protocols for unanticipated discovery of historic properties and/or human remains during construction	4.10.3
<b>Air Quality</b>	
Construction air quality impacts and impacts during operation of the modified compressor stations	4.11.1.3
Greenhouse gas emissions and climate change	4.11.1, 4.13.8
Assessment of health issues associated with radon and air quality	4.11.1
<b>Noise</b>	
Construction noise impacts and proposed mitigation measures	4.11.2
Potential noise and health-related impacts resulting from compressor station operations	4.11.2.3
<b>Reliability and Safety</b>	
Safety standards and reliability associated with facilities near densely populated areas and public services (e.g., schools and hospitals)	4.12.1, 4.12.3
Emergency response plans, evacuation plans, and coordination with community public safety services	4.12.1
Analysis of cumulative safety risk associated with proximity to Indian Point nuclear facility, Ramapo Fault, and proposed West Point Partners, LLC transmission line	4.1.5.1, 4.8.3.2, 4.8.5.1, 4.12.3
Potential for pipelines to be contaminated with polychlorinated biphenyls	4.8.6.2
<b>Cumulative Impacts</b>	
Concern about additional impacts on ecosystems/communities stressed by existing power plants and heavy industrial activity	4.13
Request for analysis of cumulative climate impacts associated with shale gas development	4.13
Cumulative impacts associated with proposed West Point Partners, LLC West Point Transmission Project	4.13
Cumulative impacts associated with the proposed Atlantic Bridge and Access Northeast Projects	4.13

## 1.5 NON-JURISDICTIONAL FACILITIES

Non-jurisdictional facilities are those facilities related to the Project that are constructed, owned, and operated by others that are not subject to the FERC jurisdiction. There are no known non-jurisdictional facilities associated with the Project.



## 2.0 PROJECT DESCRIPTION

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### 2.1 PROPOSED FACILITIES

Algonquin proposes to expand its existing natural gas transmission pipeline system in New York, Connecticut, Rhode Island, and Massachusetts. The AIM Project involves construction and operation of about 37.4 miles of replacement, loop, and lateral pipeline facilities; modifications to 6 existing compressor stations; modifications to 24 existing M&R stations; the removal of an existing M&R station; and the construction of 3 new M&R stations as described below. The Project would also involve the abandonment of two segments of existing mainline and four compressor units at one existing compressor station. An overview map of the Project locations and facilities is provided on figure 2.1-1. Detailed maps showing the pipeline routes, aboveground facilities, and pipe and contractor ware yards are contained in appendix B.

#### 2.1.1 Pipeline Facilities

The AIM Project includes about 37.4 miles of pipeline composed of the following facilities:

- replacement of 20.1 miles (in three segments) of existing 26-inch-diameter mainline pipeline with a new 42-inch-diameter pipeline (take-up and relay<sup>1</sup>), including 2.9 miles of new pipeline associated with crossing the Hudson River;
- extension of existing loop<sup>2</sup> pipeline with about 2.0 miles of additional 36-inch-diameter pipeline within Algonquin's existing pipeline right-of-way (Line-36A Loop Extension);
- replacement of about 9.1 miles of existing 6-inch-diameter pipeline with a new 16-inch-diameter pipeline (E-1 System Lateral Take-up and Relay);
- extension of an existing lateral loop pipeline with about 1.3 miles of additional 12-inch-diameter lateral loop pipeline within Algonquin's existing pipeline right-of-way (E-1 System Lateral Loop); and
- installation of about 4.9 miles of new lateral<sup>3</sup> pipeline off of Algonquin's existing I-4 System Lateral (West Roxbury Lateral).

Table 2.1.1-1 summarizes the proposed pipeline facilities associated with the Project.

The majority of the pipeline facilities (about 26.3 miles or 70 percent of the total 37.4 miles) would replace existing Algonquin pipelines, while the remainder of the pipeline facilities (about 11.1 miles or 30 percent) consist of new mainline pipeline (Hudson River crossing, new loop pipeline, and one new lateral pipeline).

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<sup>1</sup> Take-up and relay refers to a construction method by which an existing pipeline is removed and replaced with a new pipeline in the same location and ditch.

<sup>2</sup> A pipeline loop is a segment of pipe constructed parallel to an existing pipeline to increase capacity.

<sup>3</sup> A pipeline lateral branches off of a mainline pipeline to connect with or serve a specific customer or group of customers.

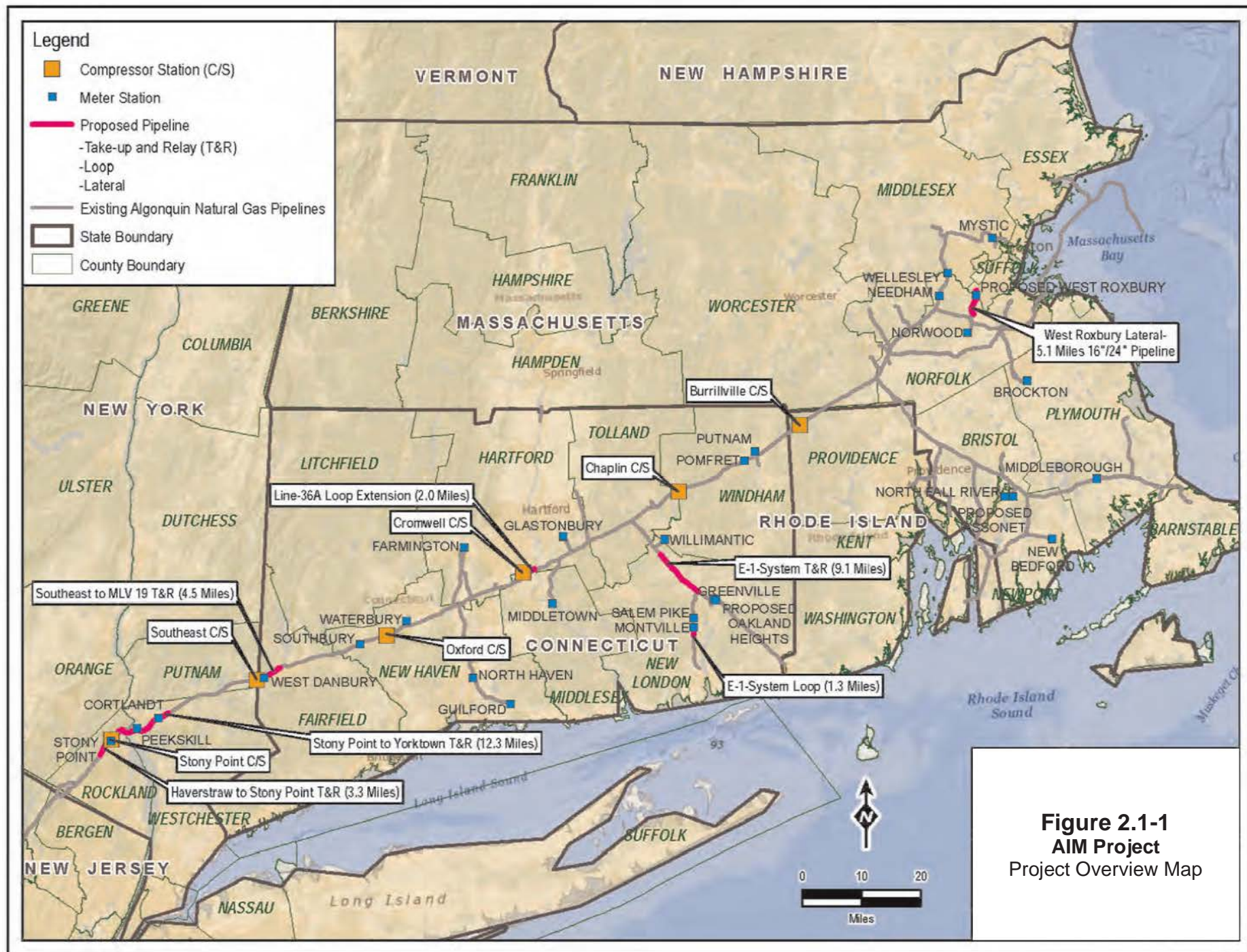


TABLE 2.1.1-1						
Summary of Pipeline Facilities for the AIM Project						
Facility	County, State <sup>a</sup>	Existing Diameter (inches)	New/ Replacement Diameter (inches)	Begin Milepost	End Milepost	Length (miles) <sup>b</sup>
<b>Replacement Pipeline</b>						
Haverstraw to Stony Point Take-up and Relay	Rockland, NY	26	42	0.0	3.3	3.3
Stony Point to Yorktown Take-up and Relay <sup>c</sup>	Rockland, NY	26	42	0.0	3.5	3.5
	Westchester, NY	26	42	3.5	12.3	8.8
Southeast to MLV 19 Take-up and Relay	Putnam, NY	26	42	0.0	0.1	0.1
	Fairfield, CT	26	42	0.1	4.5	4.4
E-1 System Lateral Take-up and Relay	New London, CT	6	16	0.0	9.1	9.1
<b>Loop Extension</b>						
Line-36A Loop Extension	Middlesex, CT	NA	36	0.0	1.8	1.8
	Hartford, CT	NA	36	1.8	2.0	0.2
E-1 System Lateral Loop Extension	New London, CT	NA	12	0.0	1.3	1.3
<b>New Pipeline</b>						
West Roxbury Lateral	Norfolk, MA	NA	16	0.0	3.4	3.4
	Suffolk, MA	NA	16	3.4	4.2	0.7
	Suffolk, MA	NA	24	4.2	5.1	0.8
<b>TOTAL</b>						<b>37.4</b>
<sup>a</sup> No pipeline facilities would be located in Rhode Island.						
<sup>b</sup> The length of the pipeline does not match the mileposting system. This is because several route modifications were incorporated into the proposed route after the mileposting system was established. This specifically affects the West Roxbury Lateral where the changes resulted in an overall decrease in total pipeline length. The changes to the other segments did not result in an overall change in the segment lengths.						
<sup>c</sup> The total pipeline length for the Stony Point to Yorktown Take-up and Relay segment includes an approximately 2.9-mile-long section of new mainline pipeline and right-of-way associated with the crossing of the Hudson River.						
NA = Not applicable						

About 79 percent of the proposed pipeline facilities involve replacement and looping that occurs within or adjacent to existing Algonquin pipeline rights-of-way. The replacement work involves excavating a trench to remove the old pipe. Once the old pipe is removed the trench is re-excavated wider and deeper (as appropriate) to accommodate the new, larger diameter pipe. The replacement pipe would be installed at approximately the same location as the old pipe in the existing Algonquin right-of-way. The loop pipeline installation involves constructing a new pipeline adjacent and parallel with other existing Algonquin pipelines. The pipeline loops require new permanent right-of-way adjacent to the existing Algonquin right-of-way.

### 2.1.1.1 Haverstraw to Stony Point Take-up and Relay

Algonquin would replace about 3.3 miles of 26-inch-diameter mainline pipeline located upstream (southwest) of the existing Stony Point Compressor Station in Rockland County, New York with new 42-inch-diameter mainline pipeline. The installment of the new 42-inch-diameter pipeline would begin at the existing Algonquin MLV 13B (milepost [MP] 0.0) in the Town of Haverstraw and end at the Stony Point Compressor Station located in the Town of Stony Point (MP 3.3). The current maximum allowable operating pressure (MAOP) of the existing 26-inch-diameter mainline is 674 pounds per square inch gauge (psig) and the proposed MAOP of the 42-inch-diameter mainline pipeline is 850 psig.

### **2.1.1.2 Stony Point to Yorktown Take-up and Relay**

Downstream (northeast) of the Stony Point Compressor Station, Algonquin would construct about 12.3 miles of 42-inch-diameter mainline pipeline in the Towns of Stony Point and Cortlandt (including the Hamlet of Verplanck and the Village of Buchanan), the City of Peekskill, and the Town of Yorktown. This pipeline section includes two segments of replacement pipeline and one segment of pipeline construction within a new permanent right-of-way across the Hudson River.

Algonquin would replace about 2.6 miles of 26-inch-diameter mainline pipeline starting at the Stony Point Compressor Station (MP 0.0) and extending to MP 2.6 in the Town of Stony Point. At MP 2.6, the 42-inch-diameter mainline pipeline installation would deviate from Algonquin's existing right-of-way and would be within a new permanent right-of-way as part of the Hudson River crossing until MP 5.5. Algonquin would not remove or replace any of the three existing pipelines that currently cross the Hudson River within the mainline right-of-way (i.e., two existing 24-inch-diameter pipelines and a 30-inch-diameter pipeline). Those existing pipelines across the river do not have sufficient available capacity to accommodate the additional volume of natural gas required by the Project Shippers but Algonquin states that it would maintain service on the three existing pipelines across the river to enhance system reliability (see section 3.5.1). Instead, Algonquin would install the pipeline below the Hudson River bed using the horizontal directional drill (HDD) construction method (see section 2.3.1.2). Between MPs 5.5 and 12.3, Algonquin would replace the existing 26-inch-diameter mainline with the new 42-inch-diameter pipeline. The current MAOP of the existing 26-inch-diameter mainline is 674 psig and the proposed MAOP of the 42-inch-diameter mainline pipeline is 850 psig.

In addition to the replacement pipeline, about 0.2 mile of 26-inch-diameter pipeline would be abandoned in place upon tie-in of the 42-inch-diameter pipeline at the Route 9 crossing. In this location, the pipeline would be offset about 20 feet from the existing 26-inch-diameter line to facilitate installation of the proposed pipeline. Section 2.3.1.2 describes the abandonment procedures that would be followed in this area.

### **2.1.1.3 Southeast to MLV 19 Take-up and Relay**

Algonquin would replace a 26-inch-diameter mainline pipeline segment with 42-inch-diameter pipeline located in Putnam County, New York, and Fairfield County, Connecticut. This 4.5-mile-long replacement segment would begin at the Southeast Compressor Station (MP 0.0) in the Town of Southeast, New York, and extend northeast across the New York/Connecticut state lines into the City of Danbury, Connecticut. Algonquin would install the new 42-inch-diameter pipeline beneath Interstate 84, the Still River, a railroad line, and Mill Plain Road using the HDD construction method (see section 2.3.1.2). The replacement segment would end at Algonquin's existing MLV- 19 site located east of State Route 39 (Clapboard Ridge Road). The current MAOP of the existing 26-inch-diameter mainline is 674 psig and the proposed MAOP of the 42-inch-diameter mainline pipeline is 850 psig.

In addition to the replacement pipeline, about 0.7 mile of Algonquin's existing 26-inch-diameter Southeast to MLV 19 pipeline would be abandoned in place upon tie-in of the 42-inch-diameter pipeline along the Interstate 84/Still River HDD segment. Section 2.3.1.2 describes the abandonment procedures that would be followed in these areas.

### **2.1.1.4 E-1 System Lateral Take-up and Relay**

Algonquin would replace about 9.1 miles of 6-inch-diameter pipeline with 16-inch-diameter pipeline along its existing E-1 System Lateral in New London County, Connecticut. The proposed 16-inch-diameter line would have the same MAOP of 750 psig as the existing 6-inch-diameter line. The replacement would begin at State Route 289 (MP 0.0) in the Town of Lebanon and extend to the southeast through the Town of Franklin, ending approximately 900 feet northwest of Plain Hill Road in the City of Norwich.



#### **2.1.1.5 Line-36A Loop Extension**

Algonquin would extend its existing Line-36A loop pipeline with about 2.0 miles of additional 36-inch-diameter pipeline in Middlesex and Hartford County, Connecticut. The proposed line would be designed for an MAOP of 850 psig. This loop extension would begin at Algonquin's existing Cromwell Compressor Station (MP 0.0) and extend downstream (east) to a termination point located approximately 1,400 feet west of the Connecticut River. The loop extension would be located within the Towns of Cromwell and Rocky Hill.

#### **2.1.1.6 E-1 System Lateral Loop Extension**

Algonquin would extend its existing Line-E-1L pipeline with about 1.3 miles of additional 12-inch-diameter loop pipeline along its existing E-1 System Lateral. The loop pipeline would begin at the existing Montville M&R Station (MP 0.0) located on the north side of Fitch Hill Road and end approximately 1.3 miles to the south, ending about 100 feet north of Raymond Hill Road. The entire loop pipeline would be located within the Town of Montville in New London County, Connecticut. The proposed pipeline would have an MAOP of 750 psig.

#### **2.1.1.7 West Roxbury Lateral**

Algonquin would install about 4.9 miles of new pipeline lateral off of its existing I-4 System Lateral in Norfolk County and Suffolk Counties, Massachusetts to provide Boston Gas with the service it has requested. The West Roxbury Lateral would consist of about 4.1 miles of new 16-inch-diameter pipeline and about 0.8 mile of new 24-inch-diameter pipeline in the Towns of Westwood and Dedham and the West Roxbury section within the City of Boston. The West Roxbury Lateral would have an MAOP of 750 psig.

### **2.1.2 Aboveground Facilities**

The proposed aboveground facilities consist of modifications to six existing compressor stations, to install a total 81,620 hp, in New York, Connecticut, and Rhode Island; and abandon 10,800 hp in New York. Algonquin would modify 24 existing M&R stations in New York, Connecticut, and Massachusetts, including the replacement of existing heaters and metering facilities, piping modifications, and facility uprates, depending on facility needs. The AIM Project also includes the construction of three new M&R stations in Massachusetts and Connecticut to deliver gas to NSTAR, Boston Gas, and Norwich Public Utilities, and the removal of one existing M&R station in Connecticut. Algonquin would also modify three existing MLV sites and five existing launcher/receiver sites, construct five new launcher/receiver sites, construct new MLV cross over piping at two locations, and construct one new MLV. The Project aboveground facilities are described in table 2.1.2-1. The locations of the aboveground facilities are shown on the maps located in appendix B.

In addition to the M&R stations listed in table 2.1.2-1, the AIM Project would also increase gas flow to eight existing Algonquin M&R stations located in Connecticut and Massachusetts. However, the inlet pressure at these facilities would not increase and, therefore, would not result in any station modifications. Two M&R stations are in Hartford County, Connecticut (Bristol M&R Station and Kensington M&R Station) and six stations are in Middlesex, Plymouth, and Norfolk Counties, Massachusetts (Ashland M&R Station, Everett M&R Station, Pine Hills M&R Station, Polaroid M&R Station, Ponkapoag M&R Station, and Weston M&R Station). In addition, there are four M&R stations in Rhode Island and three M&R stations in Massachusetts that are delivery points on the AIM Project. Given that no work is proposed at these 15 existing stations as part of the AIM Project, they have not been included in table 2.1.2-1 or further evaluated in this draft EIS.

TABLE 2.1.2-1

**Proposed New and Modified Aboveground Facilities for the AIM Project**

Facility Type/Facility	County, State	MP <sup>a</sup>	Scope of Work
<b>Existing Compressor Station Modifications</b>			
Stony Point Compressor Station	Rockland, NY	NA	Install two new compressor units; restage <sup>b</sup> one existing compressor unit; install gas cooling for one new unit; install two new heaters; install one new emergency generator; remove existing 26-inch launcher/receiver barrels and MLV assembly; and install new 42-inch MLV and new suction/discharge connections. Four existing compressor units would be abandoned and removed at this location. A net total of 21,000 hp would be added to this station.
Southeast Compressor Station	Putnam, NY	NA	Install one new compressor unit; restage one existing compressor unit; install gas cooler for new unit; install one new heater; install one new emergency generator; remove existing 26-inch launcher barrel and MLV; and install new 42-inch launcher barrel and new MLV and discharge connection. A total of 10,320 hp would be added to this station.
Oxford Compressor Station	New Haven, CT	NA	Restage one existing compressor unit. No additional horsepower would be added to this station.
Cromwell Compressor Station	Middlesex, CT	NA	Install one new compressor unit; install gas cooling for new unit and two existing turbines; install one new heater; install one new emergency generator; shutdown three existing emergency generators; and station piping modifications. A total of 15,900 hp would be added to this station.
Chaplin Compressor Station	Windham, CT	NA	Install one new compressor unit; install gas cooling for new unit and two existing compressor units; install one new heater; install one new emergency generator; shutdown an existing emergency generator; and station piping modifications. A total of 7,700 hp would be added to this station.
Burrillville Compressor Station	Providence, RI	NA	Install one new compressor unit; restage one existing compressor unit; install gas cooling for new unit; install one new heater; install one new emergency generator; and re-pipe existing compressor unit. A total of 15,900 hp would be added to this station.
<b>Existing M&amp;R Station Modifications</b>			
Stony Point M&R Station	Rockland, NY	3.0	Reconnect existing tap to new 42-inch-diameter pipeline.
Peekskill M&R Station	Westchester, NY	5.8	Replace inlet piping; install new heater; and install new regulation equipment.
Cortlandt M&R Station	Westchester, NY	10.3	Replace inlet piping; install new heater; and install new regulation equipment and gas chromatograph.
West Danbury M&R Station	Fairfield, CT	1.2	Upgrade existing facilities and inlet piping for new 850-psig inlet pressure; replace existing ultrasonic meter with new ultrasonic meters and a low flow meter.
Southbury M&R Station	New Haven, CT	NA	Piping modifications; add low flow meter; and increase size of piping.
Waterbury M&R Station	New Haven, CT	NA	Replace existing meter with ultrasonic meters and a low flow meter; upgrade regulation equipment; and replace existing building.
North Haven M&R Station	New Haven, CT	NA	Replace existing meter with ultrasonic meters and a low flow meter.

TABLE 2.1.2-1 (cont'd)

**Proposed New and Modified Aboveground Facilities for the AIM Project**

Facility Type/Facility	County, State	MP <sup>a</sup>	Scope of Work
Guilford M&R Station	New Haven, CT	NA	Rebuild entire station within existing Algonquin property and add filter separator.
Farmington M&R Station	Hartford, CT	NA	Remove upstream pressure regulation; add low flow meter; and upgrade downstream pressure regulation.
Glastonbury M&R Station	Hartford, CT	NA	Replace inlet piping and inlet heater and replace existing meters with ultrasonic meters and low flow meter.
Middletown M&R Station	Middlesex, CT	NA	Add redundant turbine meter run.
Salem Pike M&R Station	New London, CT	NA	Minor modifications to aboveground station piping and regulation equipment.
Montville M&R Station	New London, CT	0.0	Replace existing metering with ultrasonic meters and low flow meter and replace inlet piping from heater to metering.
Willimantic M&R Station	Windham, CT	NA	Rebuild entire station on adjacent new parcel and remove existing M&R station except communications (after new station in-service).
Pomfret M&R Station	Windham, CT	NA	Add redundant meter run.
Putnam M&R Station	Windham, CT	NA	Add redundant meter run.
North Fall River M&R Station	Bristol, MA	NA	Add low flow meter.
New Bedford M&R Station	Bristol, MA	NA	Replace existing metering with ultrasonic meters and low flow meter; replace two existing heaters; and replace existing building.
Middleborough M&R Station	Plymouth, MA	NA	Add redundant meter run and low flow meter.
Brockton M&R Station	Plymouth, MA	NA	Replace existing meters with two ultrasonic meters and low flow meter and replace existing building.
Norwood M&R Station	Norfolk, MA	NA	Replace inlet piping and add new actuator and upgrade metering capacity with new meter runs.
Needham M&R Station	Norfolk, MA	NA	Add redundant meter run.
Wellesley M&R Station	Norfolk, MA	NA	Replace low flow meter with ultrasonic low flow meter.
Mystic M&R Station	Middlesex, MA	NA	Add redundant meter run and a low flow meter and replace existing building.
<b>New M&amp;R Stations</b>			
Oakland Heights M&R Station	New London, CT	NA	Install new metering, regulating, and heating facilities.
Assonet M&R Station	Bristol, MA	NA	Install new metering, regulating, and heating facilities.
West Roxbury M&R Station	Suffolk, MA	4.2	Install new metering, regulating, and heating facilities.
<b>Existing M&amp;R Station Removal <sup>c</sup></b>			
Greenville M&R Station	New London, CT	NA	Remove existing M&R station (after Oakland Heights M&R Station in-service).
<b>Other New Aboveground Facilities</b>			
MLV 13B (Existing)	Rockland, NY	0.0	Remove launcher/receiver facilities and install new piping.
MLV 15 (Existing)	Westchester, NY	11.1	Replace 26-inch valve with 42-inch valve equipped with Remove Control Valve capability and cross over piping.
MLV 19 (Existing)	Fairfield, CT	4.5	Replace 26-inch valve with 42-inch valve equipped with remote control valve capability; install a 26-inch launcher barrel and 42-inch receiver barrel; and install mainline regulators and associated cross over piping.

TABLE 2.1.2-1 (cont'd)			
Proposed New and Modified Aboveground Facilities for the AIM Project			
Facility Type/Facility	County, State	MP <sup>a</sup>	Scope of Work
Launcher/Receiver (Existing)	Rockland, NY	0.0	Remove existing launcher/receiver and install new piping.
L-36A Cromwell Loop Receiver (Existing)	Middlesex, CT	0.0	Remove existing 36-inch receiver facility.
E-1 16-inch Launcher/Receiver (Existing)	New London, CT	0.0	Remove existing 16-inch receiver and 6-inch launcher facilities.
E-1 16-inch Launcher/Receiver (Existing)	New London, CT	9.1	Install 16-inch receiver and 6-inch launcher facilities and valve assembly at end of E-1 16-inch line at existing facility.
E-1 12-inch Launcher (Existing)	New London, CT	0.0	Remove 12-inch receiver.
Launcher/Receiver Pressure Regulating Facility (New)	Westchester, NY	12.3	Install 42-inch receiver barrel and 26-inch launcher barrel and install mainline regulators and associated cross over piping.
L-36A Cromwell Loop Receiver (New)	Hartford, CT	2.0	Install receiver facility, cross over piping, and launcher facilities.
E-1 12-inch Loop Receiver (New)	New London, CT	1.3	Install 12-inch receiver facility and interconnect with E-1 line.
West Roxbury Lateral Launcher/Block Valve (New)	Norfolk, MA	0.0	Install 16-inch launcher facility and lateral block valve at the existing Westwood M&R Station.
West Roxbury Launcher/Receiver (New)	Suffolk, MA	4.2	Install 16-inch receiver and 24-inch launcher facilities as well as lateral block valve at the new West Roxbury M&R Station.
Cross Over Piping (New)	Rockland, NY	2.6	Install new 42-inch MLV cross over piping to both the L30-B and 26-inch mainline and 26-inch launcher facility.
Cross Over Piping (New)	Westchester, NY	5.5	Install new 42-inch MLV cross over piping to both the L30-B and 26-inch mainline and 26-inch receiver facility.
MLV (New)	Putnam, NY	0.0	Install new 42-inch MLV with suction and discharge valves at the Southeast Compressor Station along with a new 42-inch launcher barrel assembly.
<sup>a</sup> MP information is only included for those aboveground facilities located along pipeline segments that are part of the AIM Project pipeline facilities. The remaining aboveground facilities would be located at other points along Algonquin's pipeline system and have been marked as not applicable (NA).			
<sup>b</sup> "Restage" describes work internal to an existing compressor unit that is housed inside a compressor building. It involves removing and replacing certain existing compressor equipment to improve operating efficiency without increasing horsepower.			
<sup>c</sup> The existing Willimantic M&R Station would be removed at its current location but would be rebuilt on an adjacent new parcel.			

## 2.2 LAND REQUIREMENTS

Construction of the Project would impact a total of about 575.6 acres of land, including 450.2 acres for the pipeline facilities, 94.9 acres for the aboveground facilities, 28.6 acres for the pipe and contractor ware yards, and 1.9 acres for access roads. Following construction, about 42.4 acres of new land would be permanently maintained for operation and maintenance of the AIM Project facilities, including about 33.9 acres for the new pipeline right-of-way, 6.6 acres for the aboveground facilities, and 1.9 acres for access roads.

Table 2.2-1 summarizes the land requirements for the AIM Project. A detailed description and breakdown of land requirements and use is presented in section 4.8.1. Typical right-of-way configurations that reflect the majority of the pipeline routes are provided in appendix B.

TABLE 2.2-1			
Summary of Land Requirements for the AIM Project			
Facility	County, State	Land Affected During Construction (acres)	Land Affected During Operation (acres)
<b>PIPELINE FACILITIES<sup>a, b</sup></b>			
<b>Replacement Pipeline</b>			
Haverstraw to Stony Point Take-up and Relay	Rockland, NY	45.5	0.0
Stony Point to Yorktown Take-up and Relay	Rockland, NY	39.8	3.2
	Westchester, NY	126.4	10.4
Southeast to MLV 19 Take-up and Relay	Putnam, NY	5.2	0.0
	Fairfield, CT	56.8	0.0
E-1 System Lateral Take-up and Relay	New London, CT	95.1	8.3
<b>Loop Extension</b>			
Line-36A Loop Extension	Middlesex, CT	21.1	6.0
	Hartford, CT	2.6	0.5
E-1 System Lateral Loop Extension	New London, CT	14.2	3.2
<b>New Pipeline</b>			
West Roxbury Lateral	Norfolk, MA	29.5	2.3
	Suffolk, MA	14.0	0.0
<b>PIPELINE FACILITIES SUBTOTAL</b>		<b>450.2</b>	<b>33.9</b>
<b>ABOVEGROUND FACILITIES</b>			
<b>Existing Compressor Station Modifications</b>			
Stony Point Compressor Station	Rockland, NY	20.3	1.6
Southeast Compressor Station	Putnam, NY	15.9	0.0
Oxford Compressor Stations	New Haven, CT	0.0	0.0
Cromwell Compressor Station	Middlesex, CT	14.9	1.9
Chaplin Compressor Station	Windham, CT	11.7	0.0
Burrillville Compressor Station	Providence, RI	16.7	0.0
<b>Subtotal</b>		<b>79.5</b>	<b>3.5</b>
<b>Existing Metering and Regulating (M&amp;R) Station Modifications</b>			
Stony Point M&R Station	Rockland, NY	2.2 <sup>c</sup>	0.0
Peekskill M&R Station	Westchester, NY	2.1 <sup>c</sup>	0.0
Cortlandt M&R Station	Westchester, NY	3.8 <sup>c</sup>	0.0
West Danbury M&R Station	Fairfield, CT	0.3 <sup>d</sup>	0.0
Southbury M&R Station	New Haven, CT	0.6	0.0
Waterbury M&R Station	New Haven, CT	0.4	0.0
North Haven M&R Station	New Haven, CT	0.5	0.0
Guilford M&R Station	New Haven, CT	0.5	0.0
Farmington M&R Station	Hartford, CT	0.4	0.0
Glastonbury M&R Station	Hartford, CT	0.8	0.0
Middletown M&R Station	Middlesex, CT	0.5	0.0
Salem Pike M&R Station	New London, CT	0.2	0.0
Montville M&R Station	New London, CT	1.2 <sup>c</sup>	0.0
Willimantic M&R Station	Windham, CT	0.9	0.5
Pomfret M&R Station	Windham, CT	0.4	0.0
Putnam M&R Station	Windham, CT	0.3	0.0
North Fall River M&R Station	Bristol, MA	0.0 <sup>e</sup>	0.0
New Bedford M&R Station	Bristol, MA	1.8	0.0
Middleborough M&R Station	Plymouth, MA	0.6	0.0
Brockton M&R Station	Plymouth, MA	0.6	0.0
Norwood M&R Station	Norfolk, MA	0.8	0.0

TABLE 2.2-1 (cont'd)			
Summary of Land Requirements for the AIM Project			
Facility	County, State	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Needham M&R Station	Norfolk, MA	0.4	0.0
Wellesley M&R Station	Norfolk, MA	0.5	0.0
Mystic M&R Station	Middlesex, MA	0.7	0.0
<b>Subtotal</b>		<b>11.2</b>	<b>0.5</b>
<b>New M&amp;R Stations</b>			
Oakland Heights M&R Station <sup>f</sup>	New London, CT	2.4	1.4
Assonet M&R Station	Bristol, MA	1.5	0.2
West Roxbury M&R Station	Suffolk, MA	1.0 <sup>c</sup>	1.0
<b>Subtotal</b>		<b>3.9</b>	<b>2.6</b>
<b>Existing M&amp;R Station Removal</b>			
Greenville M&R Station <sup>f</sup>	New London, CT	0.3	0.0
<b>Other New Aboveground Facilities <sup>g</sup></b>			
MLV 13B (Existing)	Rockland, NY	0.0	0.0
MLV 15 (Existing)	Westchester, NY	0.0	0.0
MLV 19 (Existing)	Fairfield, CT	0.0	0.0
Launcher/Receiver (Existing)	Rockland, NY	0.0	0.0
L-36A Cromwell Loop Receiver (Existing)	Middlesex, CT	0.0	0.0
E-1 16-inch Launcher/Receiver (Existing)	New London, CT	0.0	0.0
E-1 16-inch Launcher/Receiver (Existing)	New London, CT	0.0	0.0
E-1 12-inch Launcher (Existing)	New London, CT	0.0	0.0
Launcher/Receiver Pressure Regulating Facility (New)	Westchester, NY	0.0	0.0
L-36A Cromwell Loop Receiver (New)	Hartford, CT	0.0	0.0
E-1 12-inch Loop Receiver (New)	New London, CT	0.0	0.0
West Roxbury Lateral Launcher/Block Valve (New)	Norfolk, MA	0.0	0.0
West Roxbury Launcher/Receiver (New)	Suffolk, MA	0.0	0.0
Cross Over Piping (New)	Rockland, NY	0.0	0.0
Cross Over Piping (New)	Westchester, NY	0.0	0.0
MLV (New)	Putnam, NY	0.0	0.0
<b>ABOVEGROUND FACILITY SUBTOTAL</b>		<b>94.9</b>	<b>6.6</b>
<b>PIPE AND CONTRACTOR WARE YARDS</b>		<b>28.6</b>	<b>0.0</b>
<b>ACCESS ROADS</b>		<b>1.9</b>	<b>1.9</b>
<b>PROJECT TOTAL</b>		<b>575.6</b>	<b>42.4</b>
<sup>a</sup> The acreage shown for the land affected during construction includes all construction workspace, including the existing permanent right-of-way and includes the new land area that would be permanently affected during operation. <sup>b</sup> The acreage shown for the land affected during operation includes only the new permanent right-of-way, not Algonquin's existing permanent easement. <sup>c</sup> The temporary workspace shown for each of these M&R stations falls within the overall pipeline workspace area; therefore, these areas are not included in the acreage calculations. <sup>d</sup> A portion of the West Danbury M&R Station temporary workspace would be located within the pipeline construction workspace (2.6 acres), so the 0.3-acre is the area that would be located outside of the temporary pipeline workspace. <sup>e</sup> Work at the North Fall River M&R Station would take place within the existing station footprint. <sup>f</sup> The acres of land affected during construction at these facilities includes staging areas located a short distance away from the actual M&R station site. <sup>g</sup> This table does not include affected land calculations for MLVs, launcher/receiver facilities, and cross over piping because the land requirements for these facilities are included in the land requirements for the pipeline facilities, compressor stations, or M&R stations above.			

## **2.2.1 Pipeline Facilities**

### **2.2.1.1 Replacement**

Construction of the proposed mainline replacement portions of the AIM Project (Haverstraw to Stony Point, Stony Point to Yorktown, and Southeast to MLV 19 Take-up and Relay) would generally require a 100-foot-wide construction right-of-way to permit the safe passage of equipment and materials associated with construction of the 42-inch-diameter pipeline. This 100-foot right-of-way width does not include special crossing areas such as wetlands and waterbodies, residential areas, and agricultural areas where other construction right-of-way widths would be employed.

In most areas, the construction right-of-way includes the use of Algonquin's existing 75-foot-wide permanent right-of-way. However, there are two segments where Algonquin's existing 75-foot-wide right-of-way would not be part of the construction right-of-way. This includes the new segment of 42-inch-diameter pipeline to be constructed in the Towns of Stony Point and Cortlandt between MPs 2.6 and 5.5 across the Hudson River. In addition, the pipeline segment that crosses the Blue Mountain Reservation in the Town of Cortlandt between Washington Street (MP 6.7) and Maple Avenue (MP 8.4) is located within a 6-foot-wide permanent right-of-way.

Between MPs 2.6 and 5.5 of the Stony Point to Yorktown Take-up and Relay, Algonquin would utilize a 75-foot-wide construction right-of-way and a 50-foot-wide permanent right-of-way. There would be no construction right-of-way within the Hudson River itself with the use of HDD; however, Algonquin would establish a new 10-foot-wide permanent right-of-way across the river for the 42-inch-diameter pipeline. As stated above, Algonquin would not be removing or abandoning any of the existing pipelines that cross the Hudson River in the existing permanent easement to the north of the proposed crossing location.

For the E-1 System Lateral Take-up and Relay segment, Algonquin would utilize a 75-foot-wide construction right-of-way to accommodate construction of the 16-inch-diameter pipeline. The construction right-of-way would include Algonquin's existing 50-foot-wide permanent right-of-way in these areas and an additional 25 feet of temporary workspace. Algonquin's existing permanent right-of-way for the rest of the E-1 System Lateral is 60 feet. As part of the AIM Project, Algonquin would obtain an additional 10 feet of new permanent right-of-way along the portions of this segment where the current right-of-way is only 50 feet to match the rest of the system.

### **2.2.1.2 Loop Extension**

Algonquin would use an 85-foot-wide construction right-of-way to construct the Line-36A Loop to permit the safe passage of equipment and materials associated with construction of the 36-inch-diameter pipeline. The existing permanent right-of-way width along the Line-36A Loop Extension is 75 feet. The proposed construction right-of-way would include the use of the existing permanent right-of-way, to the extent practicable, and an additional 10 to 35 feet of temporary workspace. Algonquin would obtain an additional 20 to 30 feet of new permanent right-of-way for the Line-36A Loop Extension.

Algonquin would use a 75-foot-wide construction right-of-way for the E-1 System Lateral Loop Extension. The construction right-of-way would include the use of Algonquin's existing 30-foot-wide permanent easement, an additional 20 feet of new permanent right-of-way, and an additional 25 feet of temporary workspace. Algonquin would obtain an additional 20 feet of new permanent right-of-way along the E-1 System Lateral Loop Extension segment.



### **2.2.1.3 New Pipeline**

The West Roxbury Lateral would be primarily constructed along and within existing roads and in parking lots of commercial and industrial properties. The construction right-of-way would range between 15 and 75 feet in width. In public roadways, Algonquin would seek to obtain a permit or license agreement for the installation from the City of Boston and the Town of Dedham. The distribution of the construction right-of-way would vary depending on the location. Where there is sufficient room, the distribution of the construction right-of-way would be 25 feet on the spoil side and 50 feet on the working side. In sections where the new pipeline parallels existing road or property lines, the construction right-of-way would vary between 15 and 75 feet to accommodate field conditions at the time of construction. Where the pipeline is within existing streets, the construction right-of-way would be limited to the limits of the street right-of-way. The permanent right-of-way width for the West Roxbury Lateral would be 50 feet, where available.

### **2.2.1.4 Collocation with Existing Rights-of-Way**

About 35.0 miles (93 percent) of the 37.4 miles of AIM Project pipeline facilities would be within or adjacent to existing right-of-way, consisting of Algonquin pipeline rights-of-way, public roadways, railways, and electric transmission line corridors. Table 2.2.1-1 provides locations by milepost where the AIM Project pipeline segments would be collocated with existing rights-of-way.

The Haverstraw to Stony Point Take-up and Relay segment would be entirely collocated with existing corridors, including Algonquin's existing 30-inch-diameter loop pipeline and an Orange and Rockland Utilities, Inc. transmission line corridor.

About 10.4 miles (85 percent) of the 12.3-mile-long Stony Point to Yorktown Take-up and Relay segment would also be collocated with existing utility corridors, including Algonquin's 30-inch-diameter loop pipeline; an Orange and Rockland Utilities, Inc. transmission line corridor; and a Consolidated Edison, Inc. transmission line corridor. The only exception to this would be a portion of the new permanent right-of-way proposed along the section of the 42-inch-diameter pipeline to be installed in the Town of Stony Point and the Town of Cortlandt. About 1.8 miles (62 percent) of this 2.9-mile new pipeline segment would not be adjacent to existing corridors.

The Southeast to MLV 19 Take-up and Relay, Line-36A Loop Extension, and E-1 System Lateral Loop Extension segments would be entirely collocated with Algonquin's existing pipeline easements.

The E-1 System Lateral Take-up and Relay would be collocated with Algonquin's existing 10-inch-diameter E-1 Pipeline, as well as a Connecticut Light & Power transmission line.

About 4.5 miles (92 percent) of the 4.9-mile-long West Roxbury Lateral would be collocated within or adjacent to existing roadways. Primary roads utilized for routing include Providence Highway, Washington Street, Grove Street, and Centre Street. The pipeline would also cross Interstate 95/State Route 128.

TABLE 2.2.1-1			
Summary of Existing Rights-of-Way Adjacent to Pipeline Facilities for the AIM Project			
Facility	County, State/Municipality	MP Range	Length Adjacent to or Within Existing Right-of-Way (miles)
Replacement			
Haverstraw to Stony Point Take-up and Relay	Rockland, NY/Haverstraw	0.0 to 1.2	1.2
	Rockland, NY/Stony Point	1.2 to 3.3	2.1
Stony Point to Yorktown Take-up and Relay	Rockland, NY/Stony Point	0.0 to 2.6	2.6
		2.7 to 2.8	0.1
		3.0 to 3.1	0.1
	Westchester, NY/Cortlandt	4.2 to 4.6	0.4
		5.0 to 5.4	0.4
		5.5 to 11.0	5.5
	Westchester, NY/Yorktown	11.0 to 12.3	1.3
Southeast to MLV 19 Take-up and Relay	Putnam, NY/Southeast	0.0 to 0.1	0.1
	Fairfield, CT/Danbury	0.1 to 4.5	4.4
E-1 System Lateral Take-up and Relay	New London, CT/Lebanon	0.0 to 3.9	3.9
	New London, CT/Franklin	3.9 to 8.4	4.5
	New London, CT/Norwich	8.4 to 9.1	0.7
Loop Extension			
Line-36A Loop Extension	Middlesex, CT/Cromwell	0.0 to 1.8	1.8
	Hartford, CT/Rocky Hill	1.8 to 2.0	0.2
E-1 System Lateral Loop Extension	New London, CT/Montville	0.0 to 1.3	1.3
New Pipeline			
West Roxbury Lateral	Norfolk, MA/Westwood	0.4 to 0.5	0.1
	Norfolk, MA/Dedham	0.6 to 2.4	1.8
		2.5 to 3.4	0.9
	Suffolk, MA/West Roxbury	3.4 to 4.9	1.5

### 2.2.1.5 Additional Temporary Workspace

In addition to the construction right-of-way configurations described above, Algonquin identified a wider construction workspace in several locations due to:

- utility and existing pipeline cross-overs;
- wetland and waterbody crossings;
- road crossings;
- side slope construction;
- topsoil segregation requirements;
- extra trench depth;
- shallow bedrock and potential associated disposal of excess blast rock; and
- parking areas.

Table C-1 in appendix C identifies the areas where Algonquin would require additional temporary workspace (ATWS), their dimensions, the acreage of impact, the justification for their use, and whether or not they require a modification from the Erosion and Sediment Control Plan (E&SCP) (see section 2.3).

### **2.2.2 Aboveground Facilities**

The AIM Project would use about 94.9 acres of temporary workspace for the construction activities associated with the aboveground facilities and about 6.6 acres of land would be permanently maintained for operations (see table 2.2-1). For the compressor stations, Algonquin would use about 79.5 acres of temporary workspace during construction within its existing properties; no new property would be required for the compressor station modifications. Temporary workspace areas include the existing developed station yards and access roads as well as some open land and wooded areas immediately surrounding the developed station site within Algonquin's property. At the Chaplin, Burrillville, and Southeast Compressor Stations, these wooded temporary workspace areas would be cleared for use during construction and allowed to naturally revegetate following post-construction restoration. No additional area would be permanently maintained. However, at the Stony Point and Cromwell Compressor Stations, a portion of the wooded areas cleared within Algonquin's existing property lines during construction would be permanently maintained as part of the facility operations. The 1.6-acre permanent impact area at the Stony Point Compressor Station consists of a wooded portion of the site that would be occupied by a portion of the AIM Project compressor building, cooler units, and the suction and discharge pipelines. At the Cromwell Compressor Station, the 1.9-acre wooded area in the northeast corner of the station site would be maintained in a non-forested state following completion of construction associated with the AIM Project to facilitate station operations. Modification work at the existing Oxford Compressor Station would take place entirely within the existing compressor building and would not require any temporary workspace or new permanent impact.

Algonquin would use about 15.4 acres of temporary workspace during construction at the existing M&R stations (11.2 acres), new M&R stations (3.9 acres), and the removal of the Greenville M&R Station (0.3 acre) (see table 2.2-1). For the existing M&R stations, Algonquin would use the developed station yards and in some cases adjacent pipeline rights-of-way and open land for temporary workspace. About 3.1 acres of new land would be permanently affected as part of the operation of the three new M&R stations (2.6 acres) and the rebuild of the Willimantic M&R Station (0.5 acre) on a new property adjacent to the existing station site.

None of the other proposed aboveground facilities would require additional land for construction or operation. The acreage for these facilities is included in the acreage associated with the pipeline facilities, compressor stations, or M&R stations.

### **2.2.3 Pipe and Contractor Ware Yards**

To support construction activities, Algonquin plans to use four pipe yards in Connecticut and New York on a temporary basis. These yards would be used by the contractor and/or Algonquin to stage personnel, equipment, new pipe, and other materials necessary for construction of the facilities, and could include contractor trailers, construction equipment, fuel/lubricant storage, and vehicle parking. Table 2.2.3-1 presents the land requirements for currently identified pipe yards and contractor ware yards proposed for temporary use during construction of the AIM Project facilities. The locations of these pipe yard sites are shown on the maps provided in appendix B. Upon completion of construction, yards would be restored to the extent practicable and allowed to revert to previous land uses.

TABLE 2.2.3-1			
Pipe and Contractor Ware Yards for the AIM Project			
State/Yard Name	Location	Size (acres)	Existing Land Use
Dansville-NY Yard	9431 Foster Wheeler Road, Dansville, NY	20.0	Industrial storage yard.
Danbury – CT Yard	93 Mill Plain Road, Danbury, CT	3.0	Construction equipment storage yard.
Franklin – CT Yard	32 New Park Road Franklin, CT	5.6	Box trailer truck parking lot used previously for an Algonquin project.
<b>Project Total</b>		<b>28.6</b>	

## 2.2.4 Access Roads

To the extent feasible, Algonquin would use existing public and private road crossings along the proposed Project routes as the primary means of accessing pipeline rights-of-way and aboveground facilities. In addition to the existing access available by the use of public roads, Algonquin has identified a total of 36 access roads for use on the AIM Project, including 28 temporary access roads (TAR) and 8 permanent access roads (PAR). With one exception, the existing roads are comprised of gravel roads, unimproved dirt roads, paved and gravel driveways, private industrial and commercial roads, paved parking lots, and golf course roads. The exception is a new PAR to be constructed for the new Assonet M&R Station.

Although Algonquin would be using existing roads for temporary and permanent access, seven of these existing roads would require minor upgrades and/or widening (by about 10 feet) to accommodate use during pipeline construction. These upgrades would result in about 1.9 acres of new land disturbance. Algonquin would also need to construct one new PAR from the existing North Fall River M&R Station site to the new Assonet M&R Station. This new PAR would permanently disturb less than 0.1 acre (0.03 acre) of land.

At the new Oakland Heights M&R Station, Algonquin would utilize Oakland Drive, an existing 25-foot-wide private paved road off of Hunters Road in the City of Norwich, to access the new M&R site for operation. No road upgrades are required for this new PAR. Table 2.2.4-1 identifies the locations of new and existing access roads associated with the AIM Project.

## 2.3 CONSTRUCTION PROCEDURES

The AIM Project would be designed, constructed, operated, and maintained to conform to, or exceed, the minimum federal safety standard requirements of PHMSA in 49 CFR 192,<sup>4</sup> and other applicable federal and state regulations, including U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requirements. These regulations are intended to ensure adequate protection for the public. Among other design standards, Part 192 specifies pipeline material and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

<sup>4</sup> Pipe design regulations for steel pipe are contained in subpart C, Part 192. Section 192.105 contains a design formula for the pipeline's design pressure. Sections 192.107 through 192.115 contain the components of the design formula, including yield strength, wall thickness, design factor, longitudinal joint factor, and temperature derating factor, which are adjusted according to the project design conditions, such as pipe manufacturing specifications, steel specifications, class location, and operating conditions. Pipeline operating regulations are contained in subpart L, Part 192.

TABLE 2.2.4-1						
Proposed Temporary and Permanent <sup>a</sup> Access Roads for the AIM Project						
Access Road I.D.	Municipality, State	Approx. MP	Use (Permanent or Temporary)	Existing Road Description	Approx. Road Length (feet)	Acreage of Disturbance for Upgraded Road (acres)
<b>PIPELINE FACILITIES</b>						
<b>Replacement Pipeline</b>						
Haverstraw to Stony Point Take-up and Relay						
PAR-0.0	Haverstraw, NY	0.0	Permanent	Existing gravel road	304	NA
TAR-1.2	Stony Point, NY	1.2	Temporary	Existing paved road	493	NA
TAR-1.6 <sup>b</sup>	Stony Point, NY	1.6	Temporary	Unimproved Extension from Conklin Drive	192	0.1
TAR-2.5	Stony Point, NY	2.5	Temporary	Paved Private road	600	NA
Stony Point to Yorktown Take-up and Relay						
TAR-1.1 <sup>b</sup>	Stony Point, NY	1.1	Temporary	Paved and gravel Existing access from Franck Road	1,481	0.3
PAR-2.7	Stony Point, NY	2.7	Permanent	Dirt Existing dirt road off Mott Farm Road	233	NA
TAR-3.0	Stony Point, NY	3.0	Temporary	Existing dirt/gravel road	50	NA
TAR-3.2	Stony Point, NY	3.2	Temporary	Gravel Existing gravel road off Elm Street	1,534	NA
TAR-4.4 <sup>b</sup>	Cortlandt, NY	4.4	Temporary	Dirt/Gravel Existing road off 11 <sup>th</sup> Street	1,135	0.4
TAR-4.5	Cortlandt, NY	4.5	Temporary	Paved LaFarge Entrance Road	746	NA
TAR-5.7	Cortlandt, NY	5.7	Temporary	Paved Existing driveway off Rte. 9A	115	NA
TAR-6.3	Cortlandt, NY	6.3	Temporary	Paved Pine Lane	244	NA
TAR-6.4	Cortlandt, NY	6.4	Temporary	Paved Boulder Drive	194	NA
TAR-7.6 <sup>c</sup>	Cortlandt, NY	7.6	Temporary	Gravel, unimproved Existing station road in Blue Mountain Reservation	9,856	NA
TAR-8.3	Cortlandt, NY	8.3	Temporary	Paved Existing Montrose Station Road in Blue Mountain Reservation	255	NA
TAR-10.6 <sup>c</sup>	Cortlandt, NY	10.6	Temporary	Gravel Driveway off of Crompond Road	229	NA

TABLE 2.2.4-1 (cont'd)						
Proposed Temporary and Permanent <sup>a</sup> Access Roads for the AIM Project						
Access Road I.D.	Municipality, State	Approx. MP	Use (Permanent or Temporary)	Existing Road Description	Approx. Road Length (feet)	Acreage of Disturbance for Upgraded Road (acres)
Southeast to MLV 19 Take-up and Relay						
PAR-1.1	Danbury, CT	1.1	Permanent	Paved Existing West Danbury M&R Station road	652	NA
TAR-1.7	Danbury, CT	1.7	Temporary	Paved Private drive	1,015	NA
TAR-1.9	Danbury, CT	1.9	Temporary	Paved Parking lot	605	NA
TAR-2.0	Danbury, CT	2.0	Temporary	Paved Parking lot	318	NA
E-1 System Lateral Take-up and Relay						
TAR-2.5 <sup>c</sup>	Lebanon, CT	2.5	Temporary	Gravel Farm road	3,804	NA
TAR-3.2	Lebanon, CT	3.2	Temporary	Gravel Farm road	3,466	NA
TAR-4.5 <sup>c</sup>	Franklin, CT	4.5	Temporary	Gravel Farm road	3,778	NA
TAR-5.8 <sup>b</sup>	Franklin, CT	5.8	Temporary	Gravel Existing gravel road	1,498	0.3
TAR-6.7 <sup>b</sup>	Franklin, CT	6.7	Temporary	Unimproved Wood Road off of Lathrop Lane	2,700	0.6
PAR-7.4	Franklin, CT	7.4	Permanent	Paved Existing access to Franklin Meter Station	214	NA
TAR-7.7	Franklin, CT	7.7	Temporary	Unimproved Farm road	2,908	NA
PAR-9.1 <sup>b</sup>	Norwich, CT	9.1	Permanent	730 feet paved, 420 feet unimproved Existing access to valve site	1,150	0.1
<b>Loop Extension</b>						
Line-36A Loop Extension						
TAR-0.5	Cromwell, CT	0.5	Temporary	Unimproved Existing farm road	2,584	NA
PAR-1.7	Cromwell, CT	1.7	Permanent	Paved Golf Course Road	2,900	NA
TAR-1.8	Cromwell, CT	1.8	Temporary	Gravel Existing gravel drive off PAR-1.7	3,870	NA
E-1 System Lateral Loop Extension						
NA	NA	NA	NA	NA	NA	NA
TAR-0.3	Westwood, MA	0.3	Temporary	Paved Meditech Circle	273	NA

TABLE 2.2.4-1 (cont'd)						
Proposed Temporary and Permanent <sup>a</sup> Access Roads for the AIM Project						
Access Road I.D.	Municipality, State	Approx. MP	Use (Permanent or Temporary)	Existing Road Description	Approx. Road Length (feet)	Acreage of Disturbance for Upgraded Road (acres)
TAR-0.4	Westwood, MA	0.4	Temporary	Unimproved Access off Elm Street	244	0.1
PAR	Norwich, CT (Oakland Heights M&R Station)	NA	Permanent	Paved (25 feet wide) Oakland Drive (private), access off Hunters Road	3,270	NA
TAR	Freetown, MA (Assonet M&R Station)	NA	Temporary	Paved Road to be used as temporary construction access for Assonet M&R Station construction	805	NA
PAR <sup>b, d</sup>	Freetown, MA (Assonet M&R Station)	NA	Permanent	New Paved access to M&R station off existing access road	120	<0.1
						<b>Total: 1.9</b>
<sup>a</sup> Existing PARs currently used by Algonquin's Pipeline Operations Department at existing M&R station and compressor station facilities are not shown on this table or included as part of the Project. <sup>b</sup> These roads would need to be upgraded for use by the project. The roads would be upgraded to a width of 20 feet. <sup>c</sup> These roads would be graded and graveled as required for use by the project. <sup>d</sup> This new permanent access road would be 12 feet wide. NA = Not Applicable						

To reduce construction impacts, Algonquin would implement the AIM Project-specific E&SCP.<sup>5</sup> The E&SCP is based on the mitigation measures contained in the FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and FERC's Wetland and Waterbody Construction and Mitigation Procedures (Procedures),<sup>6</sup> as well as guidelines from the USACE and the FWS. We reviewed the E&SCP, found it to be acceptable, and have determined that Algonquin's adherence to the requirements in the E&SCP would reduce the impacts of the Project. As indicated in table C-1 in appendix C, the use of several ATWS would require alternative measures from the FERC's Plan and Procedures. These are discussed in more detail in sections 4.3.2.4 and 4.4.4. The E&SCP is further discussed in sections 4.2.2 and 4.4.3.

<sup>5</sup> Algonquin's E&SCP was included as appendix 1B to Resource Report 1 in its February 28, 2014 application (Accession No. 20140228-5269). The E&SCP can be viewed on the FERC website at <http://www.ferc.gov>. Using the "eLibrary" link, select "Advanced Search" from the eLibrary menu and enter 20140228-5269 in the "Numbers: Accession Number" field.

<sup>6</sup> The FERC Plan and Procedures are a set of construction and mitigation measures that were developed in collaboration with other federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impacts of the construction of pipeline projects in general. The FERC Plan can be viewed on the FERC Internet website at <http://www.ferc.gov/industries/gas/enviro/plan.pdf>. The FERC Procedures can be viewed on the FERC Internet website at <http://www.ferc.gov/industries/gas/enviro/procedures.pdf>.

To avoid or minimize the potential for harmful spills and leaks during construction, Algonquin developed an acceptable Spill Prevention, Control and Countermeasure Plan/Preparedness, Prevention, and Contingency Plan for the Algonquin Incremental Market Project (SPCC Plan).<sup>7</sup> The SPCC Plan describes spill and leak preparedness and prevention practices, procedures for emergency preparedness and incident response, and training requirements. Additional discussion of the SPCC Plan is presented in sections 4.2.2.6, 4.3.1.7, and 4.3.2.6.

Other resource-specific plans that have been developed for the proposed Project are discussed in more detail in section 4.0.

### 2.3.1 Pipeline Facilities

The AIM Project pipeline facilities would be located in a wide variety of land use settings. For example, the mainline replacement segments in New York and Connecticut include areas of undeveloped woodlands, steep rocky slopes, suburban residential neighborhoods, and moderately populated urban areas. In contrast, the E-1 System Lateral Take-up and Relay and E-1 System Lateral Loop Extension segments would be located in rural areas with low-density residential population and abundant agricultural land. The proposed West Roxbury Lateral would be located in a densely developed urban area. Given the wide mix in land use types in the Project construction areas, several construction techniques would be utilized for the Project as described in the following sections.

Table 2.3.1-1 provides a summary of Algonquin's proposed construction methods for the Project. The construction methods are further described in sections 2.3.1.1 and 2.3.1.2. Table D-1 in appendix D provides a comprehensive listing of proposed construction techniques by milepost.

TABLE 2.3.1-1	
Approximate Mileage by Construction Method for the AIM Project	
Construction Method	Length (miles)
Standard	21.5
Drag-section	10.1
In-street <sup>a</sup>	4.1
Bore	0.3
HDD	1.4
<b>Total</b>	<b>37.4</b>
<sup>a</sup> In-street construction may involve a variety of construction methods including stove-pipe, drag-section, or open cut.	

<sup>7</sup> Algonquin's SPCC Plan was provided as part of its responses to the April 10, 2014 FERC Environmental Data Request filed on April 30, 2014 (Accession No. 20140430-5528). The SPCC Plan can be viewed on the FERC website at <http://www.ferc.gov>. Using the "eLibrary" link, select "Advanced Search" from the eLibrary menu and enter 20140430-5528 in the "Numbers: Accession Number" field.



### **2.3.1.1 General Pipeline Construction Procedures**

Standard pipeline construction consists of specific activities that make up a linear construction sequence (see figure 2.3.1-1). The required construction activities include the following:

- surveying and staking
- clearing operations, where required;
- right-of-way and temporary construction workspace grading;
- trench excavation;
- blasting, where required;
- pipe stringing, bending, and welding;
- lowering-in, tie-ins, and backfilling;
- cleaning and hydrostatic testing; and
- cleanup and restoration.

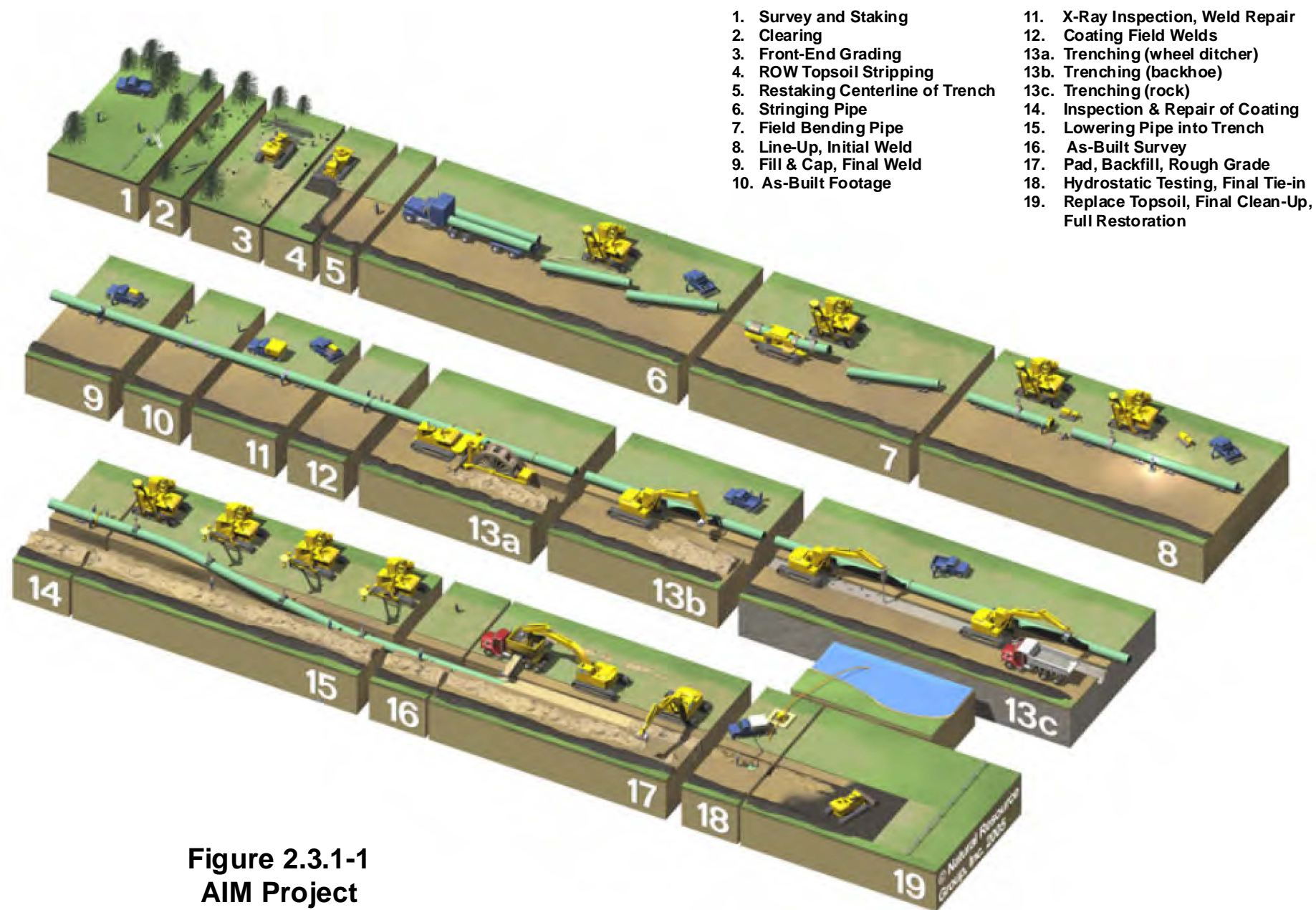
#### **Surveying and Staking**

Algonquin would notify affected landowners before initiating preconstruction surveys. A crew would then survey and stake the outside limits of the construction work areas, centerline location of the pipeline, road crossings, and any ATWS, such as lay down areas or at stream crossings. The “One Call” system of each state would be contacted and underground utilities (e.g., cables, conduits, and pipelines) would be located and flagged.

#### **Clearing Operations**

Clearing would be minimized for construction of the Project because existing pipeline rights-of-way, roadways, utility rights-of-way, and other industrial and commercial sites would be used for a significant portion of the construction right-of-way. The primary clearing work for the Project would occur in the temporary construction workspace beyond Algonquin’s existing maintained right-of-way. Initial clearing operations would include the removal of vegetation within the pipeline right-of-way and the temporary construction workspace either by mechanical or hand cutting methods. The limits of clearing would be identified and flagged in the field before beginning any clearing operations. In wetlands, trees and brush would either be cut with rubber-tired and/or tracked equipment, or hand-cut. Unless grading is required for safety reasons, wetland vegetation would be cut off at ground level, leaving existing root systems intact, and the aboveground vegetation removed from the wetlands for chipping or disposal. In uplands, tree stumps and rootstock would be left in the temporary workspace, wherever possible, to encourage natural revegetation. Stumps would be removed from the right-of-way to approved disposal locations. Brush and tree limbs would be chipped and removed from the right-of-way for approved disposal.

The cleared width within the right-of-way and temporary construction workspace would be kept to the minimum that would allow for spoil storage, staging, assembly of materials and all other activities required to safely construct the pipeline. Following clearing and before grading activities, erosion controls would be installed at the required locations as outlined in Algonquin’s E&SCP, and maintained throughout the construction process.



**Figure 2.3.1-1**  
**AIM Project**  
**Typical Pipeline Construction Sequence**

## **Right-of-Way and Temporary Construction Workspace Grading**

The entire width of the construction right-of-way, including the temporary construction workspace, would be rough graded as necessary to allow for safe passage of equipment and to prepare a work surface for pipeline installation activities. Typically, the grading of the right-of-way would be completed with bulldozers. Backhoes would be used in conjunction with bulldozers in areas where boulders and tree stumps require removal. A travel lane or traffic control would be maintained to allow for the passage of daily traffic.

The mainline replacement pipeline facilities cross numerous residential properties. At these locations, topsoil would be stripped and stockpiled separately from the subsoil during grading. There may be some areas where the construction right-of-way is limited and topsoil would need to be stockpiled offsite. Topsoil would be replaced with appropriate imported material as required. The mixing of topsoil with subsoil would be minimized by using topsoil segregation construction methods in active agricultural lands and wetlands (except when standing water or saturated soils are present).

## **Trench Excavation**

A trench would be excavated by a backhoe to the proper depth to allow for the burial of the pipe. The trench would be deep enough (about 7 feet deep for the 42-inch-diameter mainline pipeline and 36-inch-diameter loop extension pipeline and 6 feet deep for the 24-, 16-, and 12-inch-diameter loops and laterals) to provide for a minimum of 3 feet of cover over the pipe after backfilling; however, the smaller diameter pipelines could be installed with less than 3 feet of cover in areas of shallow bedrock. Deeper burial may be required in specific areas. The excavated material would be placed next to the trench or in approved ATWS or trucked offsite so as to avoid unnecessary movement of machinery across the terrain.

Dewatering of the pipeline trench may be required in areas with a high water table or after a heavy rain. All trench water would be discharged into well-vegetated upland areas or properly constructed dewatering structures to allow the water to infiltrate back into the ground. If trench dewatering is necessary in or near a waterbody, the removed trench water would be discharged into an energy dissipation/sediment filtration device, such as a geotextile filter bag or straw bale structure located away from the water's edge to prevent heavily silt-laden water from flowing into nearby waterbodies in accordance with the AIM Project's E&SCP and all applicable permits.

A discussion on contaminated groundwater or soil that could be encountered during construction of the AIM Project is provided in sections 4.2.1.5 and 4.3.1.6.

## **Rock Removal and Blasting**

Given the presence of surface rock in large portions of the Project area, blasting for rock removal would be required during construction of the AIM Project. Rock encountered during trenching would be removed using one of the techniques listed below. The technique selected is dependent on the relative hardness, fracture susceptibility, and expected volume of the material. Techniques include:

- conventional excavation with a backhoe;
- ripping with a bulldozer followed by backhoe excavation;
- hammering with a pointed backhoe attachment followed by backhoe excavation; or
- a combination of drilling holes to weaken the rock and hammering or ripping to fragment the rock.

If it is determined that the bedrock cannot be removed by conventional techniques, blasting options may include:

- blasting followed by backhoe excavation; or
- blasting surface rock prior to excavation.

If blasting is required for the Project, it would be conducted in accordance with Algonquin's Rock Removal Plan (see appendix E) as well as applicable state blasting codes and any local blasting requirements. All blasting activity would be performed by state-licensed professionals according to strict guidelines designed to control energy release. Proper safeguards would be taken to protect personnel and property in the area. This includes conducting preconstruction surveys of homes and businesses, as approved by the landowner. Blasting mats or soil cover would be used as necessary to prevent the scattering of loose rock. Blasting would be conducted during daylight hours and would not begin until occupants of nearby buildings, stores, residences, and places of business have been notified. Algonquin would comply with applicable regulations that apply to blasting and blast vibration limits with regard to structures and underground utilities. Rock removal and blasting are further discussed in section 4.1.6 and in Algonquin's Rock Removal Plan (see appendix E). We have reviewed the Rock Removal Plan and find it to be acceptable.

### **Pipe Stringing, Bending, and Welding**

Once the trench is excavated, the next process in standard pipeline construction is stringing the pipe along the trench. Stringing involves initially hauling the pipe by tractor-trailer, generally in 40-foot lengths from the pipe storage yard, onto the right-of-way. The pipe would be off-loaded from trucks and placed next to the trench using a side-boom tractor. The pipe joints would be lined up end-to-end to allow for welding into continuous lengths known as strings. For pipe construction in urban areas, Algonquin would likely utilize mini-crews where the pipe would be hauled to the work site daily. Some pipe may be stockpiled on the right-of-way and would be fenced and stabilized if left over night.

Once the sections of pipe have been placed on the right-of-way, the pipe is bent as necessary so the pipe fits the horizontal and vertical contours of the excavated trench. Pipe is usually bent with a hydraulic pipe-bending machine.

Professional welders qualified according to applicable industry standards and Algonquin's requirements would weld the joints of pipe together in two steps. The front-end welding crew would clean and align the pipe bevels in preparation for welding and place at least the first two passes in the welding process. The back-end welders would complete the welds started by the front-end welders. The pipe is welded into long strings to minimize the number of welds that have to be made in the trench (tie-in welds).

Each weld is inspected by an independent certified Non Destruction Test technician to ensure its structural integrity is consistent with 49 CFR 192 of PHMSA's regulations. X-ray or ultrasonic images are taken and processed on site for virtually instantaneous results. Those welds that do not meet the Algonquin's specifications would be repaired or replaced and re-inspected.

The pipeline is coated to prevent corrosion. The pipe lengths would be coated (usually with a heat-applied epoxy) at a coating mill prior to being delivered to the Project. The ends of each piece are left bare to allow for welding. After welding, the weld area is field coated by the coating crew. Because pipeline coatings are electrically insulating, the coating is inspected using equipment that emits an electric charge to ensure there are no locations on the pipeline with a defect in the coating.

## **Lowering-in, Tie-Ins, and Backfilling**

After a pipe string has been coated and inspected, the trench is prepared for the installation of the pipeline. The trench is cleared of loose rock and debris. If water exists in the trench, the water is pumped out into a well-vegetated upland area and/or into an approved filter with the exception of wetland areas where the “push pull” installation may be required. In sandy soils, the trench is shaped to support the pipe. In areas where the trench contains bedrock, a sand bedding is placed on the bottom of the trench, and/or pads made of sandbags and/or clay are placed at regular intervals along the trench bottom to support the pipe. The lowering-in crew places the pipeline in the trench, usually with side-boom tractors.

Once the sections of pipe are lowered-in, the tie-in crew makes any final welds in the trench. Additional excavations as needed, lowering-in, lining up, welding, weld nondestructive inspection, and coating the final welds are accomplished by this crew.

All suitable material excavated during trenching would be redeposited into the trench. Where excavated material is unsuitable for backfilling, then additional select fill may be required. If the soil is rocky, the pipe would be padded with relatively rock-free material placed immediately around the pipe. This material may be obtained from commercial areas in the region. Where suitable, the subsoil may be mechanically screened to produce suitable padding material. Padding of the pipe is usually performed with backhoes. If padding is obtained from an offsite source, it is normally placed in the trench by front-end loaders. Topsoil would not be used as padding material. Once the pipe is padded, the trench is then backfilled with suitable excavated subsoil material. Before the completion of backfilling 12-inches below natural grade, 24-inch-wide bright yellow warning tape would be installed designating the location of the pipeline below. The yellow tape would have a warning notice indicating the presence of a high-pressure natural gas pipeline and provide Algonquin’s toll free number for contact. The top of the trench may be slightly crowned to compensate for settling except for paved areas, where standard compaction methods would be employed. The topsoil is then spread across the graded construction right-of-way when applicable. The soil would be inspected for compaction, and scarified as necessary.

## **Cleaning and Hydrostatic Testing**

Once the pipeline tie-ins are completed, it is internally cleaned with pipeline “pigs.” A manifold is installed on one end of the long pipeline section and a pig is propelled by compressed air through the pipeline into an open pig catcher to remove any dirt, water, or debris that was inadvertently collected within the pipeline during installation.

After cleaning, the pipeline segments would be pressure tested in accordance with Algonquin’s requirements to ensure that they are capable of operating safely at the intended design pressure. Hydrostatic testing would be conducted in accordance with applicable permits, and no chemicals would be added to the test water. The pipeline is hydrostatically tested with water that is normally obtained from water sources crossed by the pipeline, including available municipal supply lines. See section 4.3.2.5 for a discussion on water source(s) and quantities that would be required to hydrostatically test each of the AIM Project facilities. The water propels a pig through the pipeline in a manner that fills the pipeline with water. Test pressure is obtained by adding water to the test section of the pipeline with a high-pressure pump. At the completion of the hydrostatic test, the pressure is removed from the section and the water is released from the test section by propelling the pig with air, which forces the water from the pipeline. Additional “drying” pig runs are made, if necessary, to remove any residual water from the pipeline. All hydrostatic test water would be discharged within suitable vegetated upland areas in accordance with Algonquin’s E&SCP.

## **Cleanup and Restoration**

Final cleanup (including final grading) and installation of permanent erosion control measures would be completed within 20 days after the trench is backfilled, weather and soil conditions permitting. In conjunction with backfilling operations, any woody material and construction debris would be removed from the right-of-way. The right-of-way would be fine-graded to prepare for restoration. Permanent slope breakers or diversion berms would be constructed and maintained in accordance with Algonquin's E&SCP. Fences, sidewalks, driveways, stone walls, and other structures would be restored or repaired as necessary.

Revegetation would be completed in accordance with state and municipal requirements (where applicable) and written recommendations on seeding mixes, rates, and dates obtained from the local soil conservation authority or other duly authorized agency and in accordance with Algonquin's E&SCP. The right-of-way would be seeded within 6 working days following final grading, weather and soil conditions permitting. Alternative seed mixes specifically requested by the landowner or required by agencies may be used. Any soil disturbance that occurs outside the permanent seeding season or any bare soil left unstabilized by vegetation would be mulched in accordance with Algonquin's E&SCP.

### **2.3.1.2 Special Construction Procedures**

In addition to the standard pipeline construction methods described above, Algonquin would implement special construction procedures due to site-specific conditions and to reduce overall Project impacts.

#### **Same Ditch Replacement Construction Method**

About 26.3 miles of the Project would involve replacing existing pipeline with a larger diameter pipeline within the same ditch as the existing pipeline. This involves excavating a trench to remove the existing pipe; followed by the removal of the pipe. The removed pipe would then be transported away from the construction work area and properly disposed. Once the existing pipe is removed, the trench would be re-excavated wider and deeper (as appropriate) to accommodate the new, larger diameter pipeline, and the replacement pipe would be installed at approximately the same location as the existing pipe using standard construction methods (see section 2.3.1.1). Where the existing pipeline crosses major roadways and is cased, and the crossing method is bore or HDD, the carrier pipe would be removed and the casing pipe would be abandoned in place by capping and filling with appropriate material. Where casing pipe is not present, the carrier pipe would be abandoned in place. In these instances, the new pipeline would be installed with a 10-foot offset from the abandoned pipe or directly under the existing pipe, depending on the locations and depths of existing foreign utilities in the roadway. Where the pipeline to be removed or abandoned is in the proposed construction right-of-way for the new pipeline, the defined construction right-of-way would not be exceeded during removal.

#### **Abandonment Construction Method**

For the sections of pipe that would be abandoned at the Route 9 and Interstate 84 crossings, the pipe would first be inspected for free flowing liquids and if present all free flowing liquids would be removed and disposed of in accordance with all federal and state requirements. Wipe samples would then be taken at each end of the 0.2-mile-long segment at Route 9 and the 0.7-mile-long segment at Interstate 84 to check for residual polychlorinated biphenyls (PCBs) (see section 4.8.6.2). Each end would then be capped using a steel plate with a threaded fitting. The pipe would then be filled with

cement grout and each end would be permanently closed using threaded plugs. Considering the 26-inch-diameter mainline would be in the same right-of-way as the existing 30-inch-diameter pipeline, Algonquin would continue to maintain the right-of-way.

### **Road and Railroad Crossing Construction Methods**

The AIM Project would require 100 public road crossings and 5 railroad crossings. These roads and railroads are listed in table F-1 in appendix F. Constructing the AIM Project across public and private roadways and railroads, using either conventional open cut or road bore methods, would be based on site conditions and road opening permit requirements. Roadway opening permits would be obtained from applicable state and local agencies. Permit conditions would ultimately dictate the day-to-day construction activities at road crossings.

Construction would be scheduled for work within roadways and specific crossings so as to minimize impacts on commuter traffic. Appropriate traffic management and signage would be set up and necessary safety measures would be developed in compliance with applicable permits for work in the public roadway. Arrangements would be made with local officials to have traffic safety personnel or qualified and trained flaggers on hand during periods of construction. Provisions would be made for detours or otherwise to permit traffic flow if needed.

Crossings of private roadways would be coordinated with landowners to minimize access impacts. In those areas where the excavation of a longer length of trench would not pose a safety problem, the pipeline would be installed using the standard open trench method. Open trenches would either be backfilled or covered with steel plates during all non-working hours. Steel plates would be kept on site at each crossing so that a temporary crossing could be made across the trench as required (e.g., emergency vehicles).

Roadway crossing construction would occur using one of the methods described below.

#### **Open-cut Crossing**

This method is used on driveways, parking lots, and roads with low traffic densities where pipeline installation activities would not adversely impact the general public. The first step is to install the proper traffic control devices. Traffic would be detoured around the open trench during the installation process. The pipeline crossing would be installed one lane at a time. As the pipe is installed, successive lanes are alternately taken out of service for pipe installation until the crossing is completed.

Another option is to detour traffic around the work area through the use of adjacent roadways. If the roadway surface is paved, pavement over the proposed trench is cut, removed, and properly disposed. The trench would be excavated using a combination of a backhoe and hand shoveling around existing utilities once the ditch is completed and the pipe is installed (welded, inspected, and coated). All existing utilities exposed during excavation would be supported at their existing elevation to avoid damage. Support would be maintained until backfill of the pipeline ditch and the exposed utility are completed. The trench is then backfilled. A 15:1 sand to concrete mix called flowable fill, or Controlled Density Fill, may be used as backfill material to 1 foot over the pipeline. The additional backfill must be compacted to reduce stresses on the pipeline and to ensure the roadway supports the traffic load without settling. The existing trench subsoil may be used in the backfill if it can be compacted and is authorized by the permitting agency. In those cases where existing trench material is not used, backfill material would be obtained from an outside source and hauled in. The material used and methods of placement would comply with the requirements of the permitting agency.

Once the ditch line is backfilled, the contractor would install and maintain a temporary patch in the excavated areas. Final paving of existing roadways would be completed in accordance with applicable state and municipal requirements. With appropriate approvals, final paving may be accomplished the year following pipeline construction to allow for potential settlement of the ditch line in the road surface. Roadway markings and striping would be added as necessary. As required by PHMSA, pipeline markers would be placed adjacent to local roadways and decals would be placed on paved areas identifying the presence of a pipeline below the surface of the pavement.

### Bore Crossing

On roads with higher traffic densities and for railroads where service must be maintained, the pipeline may be installed by boring a hole under the road or railway. The soil and/or rock are bored by a drill that contains a cutting head which cuts through the soil. Dummy casing, which is slightly larger in diameter than the pipeline, may be installed immediately behind the cutting head. An auger is placed inside the pipe to remove the cuttings. Once the bore is completed, the pipeline section is welded to the boring pipe and pulled into place as the boring pipe is removed. Any voids between the pipeline and the subsoil are filled with grout (a sand-cement mix) to prevent settlement of the roadway surface or railroad track. This method allows the road or railroad to remain in service while the installation process takes place and minimizes the potential for trench settlement.

### Cased Crossing

The procedure for a cased crossing is similar to a bored crossing with one exception. A section of steel casing pipe, which is several inches in diameter greater than the pipeline, is bored into place. Casing sections are welded together to ensure the casing length is sufficient to cross the entire roadway. Once the casing pipe has been installed, the pipeline is pulled through the casing. To prevent potential corrosion of the pipeline due to contact between the pipeline and the casing, the pipeline is insulated from the casing pipe; usually the pipeline is coated with a layer of concrete. To prevent water from entering the casing, the ends of the casing are sealed with rubber or polyethylene seals. The space between the casing and the pipeline is vented to the atmosphere through the use of sections of small diameter pipe (vent pipe), which are welded to the casing ends and run from the casing to several feet above the surface of the ground. Casing pipe would be installed when required by permit or when there is a likelihood of encountering rock during the boring. Generally, crossings of major federal and state highways and certain railroads are installed using casings.

### Hammer Technique

In addition to the boring techniques described above, one additional technique consists of driving casing pipe that is slightly larger in diameter than the proposed pipeline under the roadway with a horizontal air-operated reciprocating hammer. The casing pipe is placed against the end of the trench near the edge of the roadway and driven under the paved road. Once in place, the material inside the casing is augured out and the pipe is installed through the casing. The casing pipe is then removed while grout is placed around the pipeline.

### **In-street Construction Methods**

In addition to road crossings, portions of the West Roxbury Lateral would be constructed within or along existing roadways. Algonquin would need to obtain road opening permits from the City of Boston and the Town of Dedham before conducting work in these roadways. For in-street construction, traffic control devices would first be installed. Traffic would be detoured around the construction area during the installation process. The working area along any street would be limited to areas designated in



applicable road opening permits. All in-street construction activities would be limited to this section, and this work area would move along the street as construction advances. Pavement over the proposed trench is cut, removed, and properly disposed. The trench is excavated using a backhoe and the pipe is installed (welded, radiographed, and coated). Excavation of the trench would proceed ahead of pipe installation to provide the contractor information regarding the existing utilities that would have to be crossed and to make vertical or horizontal adjustments in the alignment of the pipeline. The trench is then backfilled.

No trench would be left unprotected overnight because the trench would be backfilled or plated to ensure public safety. A 15:1 sand to concrete mix called flowable fill, or Controlled Density Fill, may be used. The backfill must be compacted to reduce stresses on the pipeline and to ensure the roadway supports the traffic load without settling. The existing trench subsoil may be used in the backfill if it can be compacted and is authorized by the permitting agency. In most cases, backfill material would be obtained from an outside source and hauled in. The material used and methods of placement would comply with the requirements of the permitting agency. Any excess spoils from the trench would be transported to a designated staging area(s) or workspace along the route where it would be temporarily stockpiled on an impervious surface and kept covered while soil management options are assessed. Stockpiled soil would be sampled and evaluated to determine the proper receiving facility for the material. The material would be transported to the receiving facility with proper documentation in accordance with federal and state regulations.

As with road crossings, once the ditch line is backfilled, the contractor would install and maintain a temporary patch in the excavated areas. Final paving of existing roadways would be completed in accordance with applicable state and municipal requirements. With appropriate approvals, final paving may be accomplished the year following pipeline construction to allow for potential settlement of the ditch line in the road surface. Algonquin would repave from curb-to-curb the Town of Dedham's roadways affected by the pipeline. Roadway markings and striping would be added as necessary. As required by PHMSA, pipeline markers would be placed adjacent to local roadways and decals would be placed on paved areas identifying the presence of a pipeline below the surface of the pavement.

Algonquin has developed acceptable traffic management plans for the New York and Massachusetts portions of the AIM Project. These plans are provided in appendix G and discussed in more detail in section 4.9.5.

### **Drag-Section and Stove-Pipe Specialized Construction Methods**

Construction in commercial/industrial areas and high-density urban areas would be accomplished by conventional construction methods, or by implementing specialized construction methods such as the drag-section or stove-pipe methods. These specialized methods are used to reduce the amount of workspace and duration of construction activity in the immediate vicinity of commercial and other high-density urban areas. The pipeline trench would be excavated as the pipeline section is fabricated, inspected, and made ready for installation.

For the drag-section method, several sections of pipe are prefabricated, the trench is dug to accommodate only the distance that can be installed and backfilled, the prefabricated pipeline segments (or drag sections) are placed into the trench and backfilled. For the stove-pipe method, one short section of trench is dug, a section of pipe is laid in the trench and welded into place, and that section of the trench is backfilled. Both specialized construction methods minimize the amount of land required for construction and the time the trench is left open.

## **Residential Areas**

Residential properties and other structures within 50 feet of construction work areas are identified in table H-1 in appendix H. Algonquin would undertake efforts in residential areas to minimize neighborhood and traffic disruption and to control noise and dust to the extent practicable.

The following measures would be taken on residential properties:

- notify local residents via U.S. mail 7 to 14 days in advance of construction activities;
- fence the boundary to the construction work area to ensure construction equipment, materials, and spoil remain in the construction right-of-way;
- preserve all mature trees and landscaping where practical;
- ensure piping is welded and installed as quickly as reasonably possible;
- backfill the trench as soon as the pipe is laid or temporarily steel plate the trench; and
- complete final cleanup (including final grading) and installation of permanent erosion control measures within 10 days after the trench is backfilled, weather conditions permitting.

For residences within 50 feet of the construction workspace, Algonquin has developed individual Residential Construction Plans noting special construction techniques and mitigation measures. These plans show the typical construction area to be disturbed and safety measures that would be implemented, such as construction fencing, access provisions, and use of steel plates. We reviewed the Residential Construction Plans, found them to be acceptable, and have determined that Algonquin's adherence to the requirements in the plans and our additional recommendations would reduce the potential impacts of construction on nearby residences. These plans are provided in appendix H. Additional analysis of the impacts on residential areas and residences is provided in section 4.8.3.

## **Rugged Topography**

Both temporary and permanent erosion controls would be necessary to adequately minimize erosion and sedimentation during construction activities in steep and rugged terrain. Temporary slope breakers are intended to reduce the runoff velocity and divert water off of the right-of-way. Temporary trench breakers may be used in conjunction with the temporary slope breakers to adequately channel the surface flow off of the right-of-way. In terrain with slopes too steep to safely and adequately construct the temporary slope breakers and temporary trench plugs, they may be placed where practicable, at the discretion of the Environmental Inspector (EI). Section 2.5 further describes the role and responsibilities of the EI.

Permanent trench breakers consisting of sandbags, gravel, cement, or cement-filled sacks would be installed when the trench is backfilled in ditches over and around the pipe in areas of slope with erosion potential. Temporary trench plugs, usually composed of compacted earth or other suitable low-permeable material, would be used to isolate waterbodies and wet areas to minimize channeling of groundwater along the ditch line during construction.

The following special construction techniques would be used during construction along side slopes. During grading, the upslope side of the pipeline right-of-way would be cut. The material removed from the cut would be used to fill the downslope edge of the right-of-way in order to provide a safe and level surface from which to operate the heavy equipment. Side hills may require ATWS downslope in order to accommodate the fill material. During grade restoration, the spoil would be placed back in the cut and compacted. Any springs or seeps found in the cut would be carried downslope through polyvinyl chloride pipe and/or gravel French drains installed as part of the cut restoration.

Permanent slope breakers would be constructed in coordination with the placement of the trench breakers in accordance with Algonquin's E&SCP. During restoration, seed would be applied at an increased application rate to increase the probability of establishment and rapid stabilization. In rugged terrain, additional types of temporary erosion controls such as super silt fence, erosion control matting, and hydro-mulching may be used during construction and restoration activities.

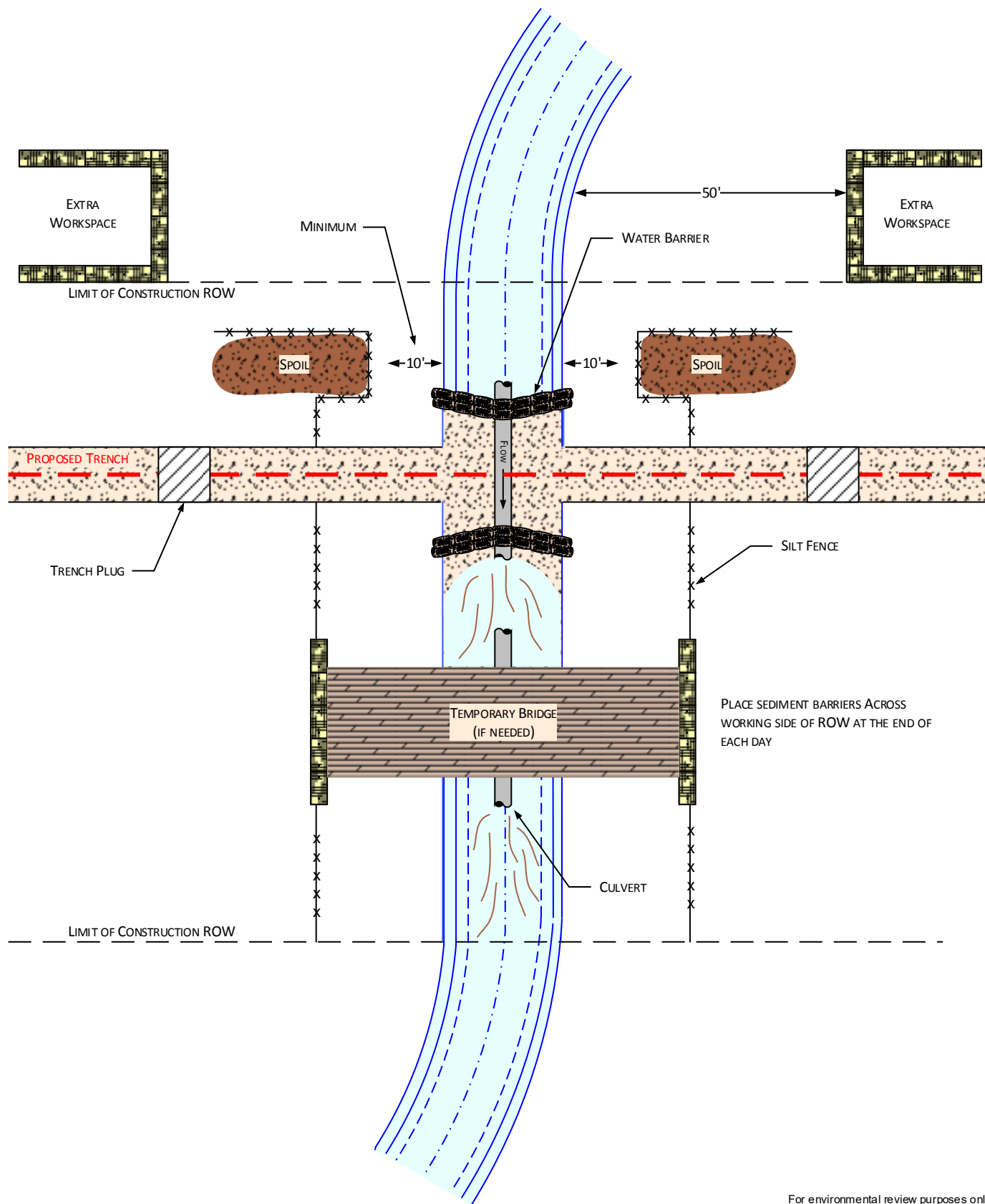
### **Active Agricultural Land**

Topsoil would be segregated in agriculturally cultivated or rotated croplands, pastures, and hayfields. In these areas, topsoil would be stripped and placed separate from subsoil when excavating the trench. Excess rock would be removed from at least the top 12 inches of soil to the extent practical. The size, density, and distribution of rock left in construction work areas should be similar to adjacent areas not disturbed by construction, unless otherwise approved in writing by the landowner. ATWS may be required when topsoil segregation is required. After the pipe has been lowered into the ditch, subsoil is used for backfilling and topsoil is then spread across the graded right-of-way. Equipment traffic would be controlled within agricultural land to minimize rutting or compaction. Soil compaction would be treated, as necessary, in conjunction with the Algonquin's E&SCP. See section 4.8.1 for additional discussion on agricultural land.

### **Waterbody Construction Methods**

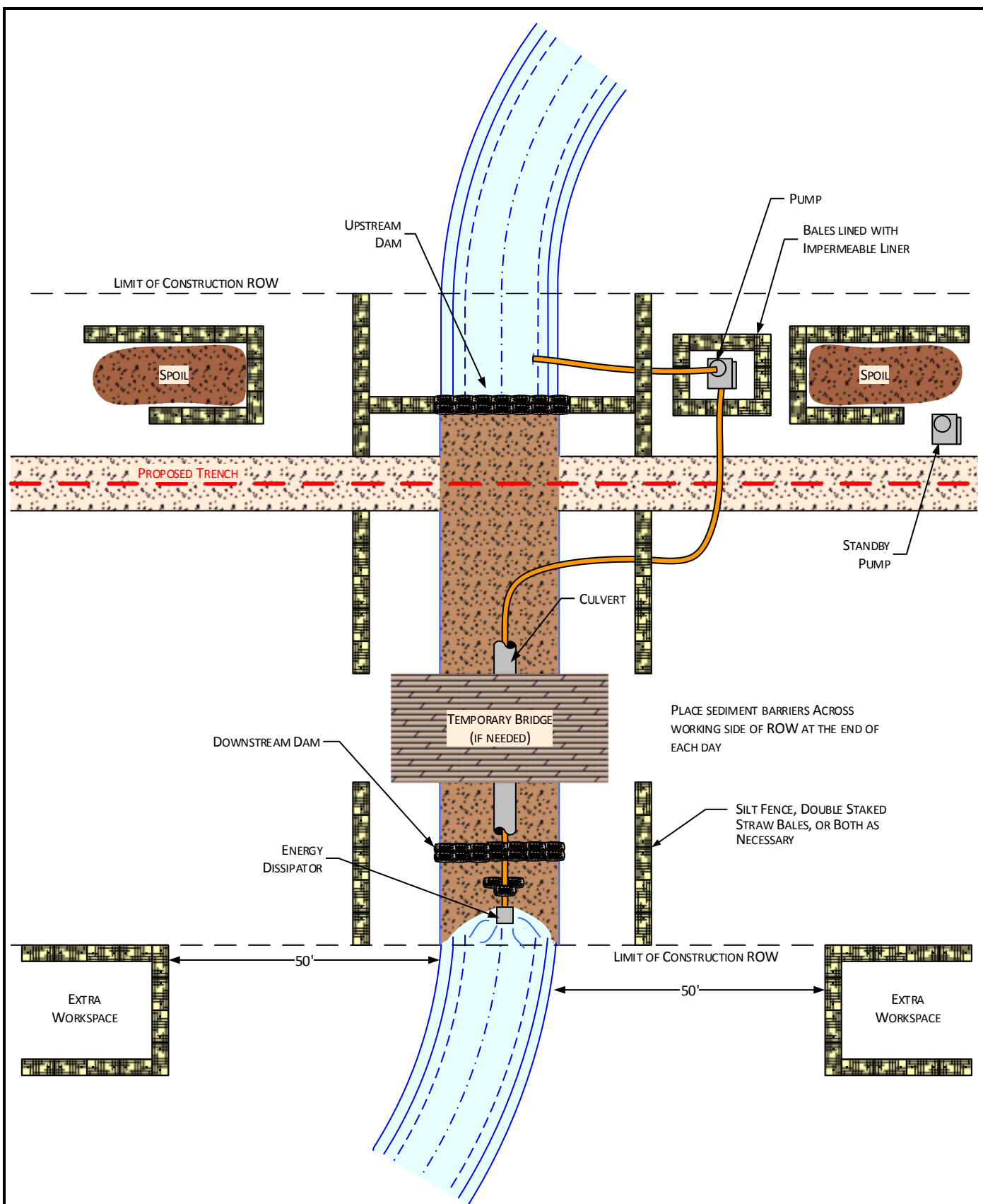
Construction of the AIM Project would cross 39 waterbodies in New York, 62 in Connecticut, and 1 in Massachusetts (see table I-1 in appendix I). The waterbody crossings would be constructed in accordance with the methods and timing restrictions described in Algonquin's E&SCP and state and federal permit requirements. To minimize potential impacts, waterbodies, streams, and rivers would be crossed as quickly and as safely as possible. Adherence to the construction procedures would ensure stream flow would be maintained throughout construction. Flowing waterbodies would be crossed by the pipeline facilities using conventional backhoe type equipment and dry crossing techniques to isolate the work area.

Unless dry at the time of crossing, minor streams (those less than 10 feet wide) would be crossed using a dry crossing method. The dry crossing method would involve installation of a flume pipe(s) and/or dam and pump before trenching to divert the stream flow over the construction area and allow trenching of the stream crossing in drier conditions isolated from the stream flow (see figures 2.3.1-2 and 2.3.1-3). Spoil removed during the trenching would be stored away from the water's edge and protected by sediment containment structures. Pipe strings would be fabricated on one bank and either pulled across the stream bottom to the opposite bank or carried into place and lowered into the trench. Where these methods are employed, ATWS areas would be required for assembly of the pipe strings and spoil storage areas.



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**Figure 2.3.1-2**  
**AIM Project**  
 Typical Flume Method  
 Waterbody Crossing



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**Figure 2.3.1-3**  
**AIM Project**  
 Typical Dam and Pump Method  
 Waterbody Crossing

The open-cut crossing method would involve excavation of the pipeline trench across the waterbody, installation of the pipeline, and backfilling of the trench with no effort to isolate flow from construction activities. This method would only be used at stream crossings where there is no perceptible water flow at the time of construction. Use of the open-cut crossing method on any waterbodies would be confirmed during the federal and state permitting processes. Excavation and backfilling of the trench would be accomplished using backhoes or other excavation equipment working from the banks of the waterbody. Trench spoil would be stored at least 10 feet from the banks (topographic conditions permitting). A section of pipe long enough to span the entire crossing would be fabricated on one bank and either pulled across the bottom to the opposite bank, floated across the stream, or carried into place and submerged into the trench. The trench would then be backfilled and the bottom of the watercourse and banks restored and stabilized. Sediment barriers, such as silt fencing, staked straw bales, or trench plugs would be installed to prevent spoil and sediment-laden water from entering the waterbody from adjacent upland areas.

Except where reasonable alternative access is available, temporary construction equipment crossings would be installed across all waterbodies to gain access along the right-of-way for construction operations. Equipment crossings would be installed after clearing to minimize streambed disturbance and downstream siltation. Only clearing equipment and equipment necessary for the installation of equipment bridges would cross waterbodies prior to bridge installation. Where culverts are used, devices would also be placed at the outlet to prevent scouring of the stream bottom. After such equipment crossings are established, construction equipment would not be permitted to drive through the waterbody for access, and the equipment crossings would be removed once access in the area is no longer needed. After clearing activities, construction equipment must cross waterbodies on bridges consisting of one of the following devices:

- clean rock fill and culverts;
- equipment pads, wooden mats, and/or culverts; or
- flexi-float or portable bridge.

To facilitate pipeline construction across waterbodies, ATWS may be needed adjacent to the waterbody to assemble and fabricate the length of pipe necessary to complete the crossing. This work area is in addition to the standard construction right-of-way and would be located at least 50 feet away from the stream banks in cleared areas. If topographic conditions do not permit a 50-foot setback, then these areas would be located at least 10 feet away from the water's edge. If setbacks would not be able to be maintained due to construction limitations, such as slope and road crossing requirements, Algonquin would request modifications to the FERC Procedures (see section 4.3.2.4).

Vegetation would not be cleared, except over the pipeline trench, in the area within 10 feet of the waterbody. The work area would be limited in size to the minimum area necessary to safely construct the waterbody crossing and accommodate any stockpile of excavated material from the trench and the prefabricated pipeline crossing section.

Proposed waterbody crossing methods for each waterbody crossed by the proposed pipeline segments are provided in section 4.3.2.3 and are described in more detail in Algonquin's E&SCP.

### **Horizontal Directional Drill**

Algonquin proposes to utilize the HDD method at two locations along the mainline replacement segments. The HDD method would be used to cross the Hudson River along the Stony Point to Yorktown Take-up and Relay segment in the Town of Stony Point and Town of Cortlandt, New York. The second HDD would be used to cross Interstate 84 and the Still River along the Southeast to MLV 19 Take-up and Relay segment in the City of Danbury, Connecticut.

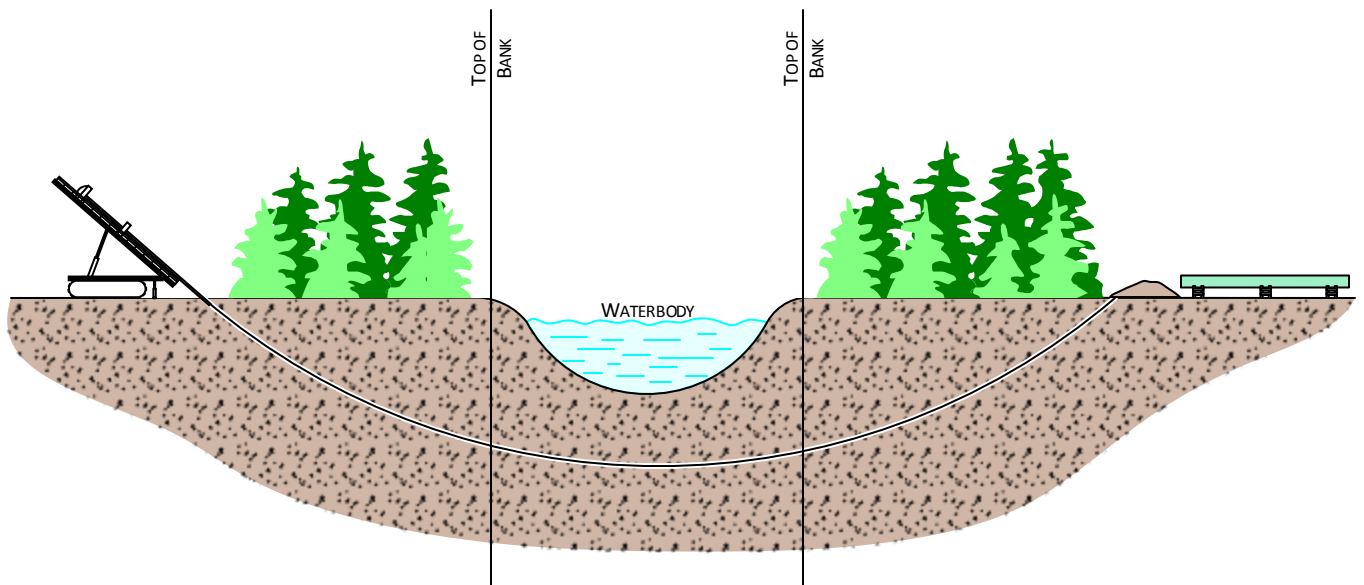
The HDD method involves establishing land-based staging areas along both sides of the proposed crossing (see figure 2.3.1-4). The process commences with the boring of a pilot hole beneath the waterbody or road and then enlarging the hole with one or more passes of a reamer until the hole is the necessary diameter to facilitate the pull-back (installation) of the pipeline. Once the reaming passes are completed, a prefabricated pipe segment is then pulled through the hole to complete the crossing. As is discussed further in section 4.3.2.3, the Hudson River HDD would be completed in soft soils and the Interstate 84/Still River HDD would occur in rock. Algonquin anticipates utilizing the intersect method to complete the pilot hole for both HDDs. The intersect method involves drilling from both sides of the HDD and intersecting in the middle. This method is preferred as it is less time-consuming and the exact entry and exit locations can be predetermined by utilizing this method. This process also enables the drilling sequence to have an instant hydraulic connection once the intersect is complete providing for a cleaner pilot hole. Algonquin has prepared site-specific crossing plans for the Hudson River and Interstate 84/Still River HDD crossings. These plans are provided in appendix J and discussed in more detail in section 4.3.2.3.

While the HDD method is a proven technology, there are certain impacts that could occur as a result of the drilling such as the inadvertent release of drilling fluid, which is a non-hazardous fluid comprised primarily of water, inert solids, and bentonite, a naturally occurring clay mineral. Drilling fluids that are released typically contain a lower concentration of bentonite when they surface because the bentonite is filtered out as it passes through sandy soils.

Algonquin would implement preventive measures so that the HDDs are performed in a manner that prevents, to the extent reasonably practicable, an inadvertent release, such as monitoring the down-hole mud pressures and continually swabbing the hole to keep the annulus free of cuttings. Should an inadvertent release occur, Algonquin's contractor would stop the drilling process and secure the area with straw bales, silt fence, sand bags, or other means to stop the spread of the inadvertent release and secure a 50-foot perimeter. Typically, a pump is installed in the secured area and the bentonite/water mixture is pumped back to the mud rig. Algonquin would contain, control, and clean up any release of drilling fluid during the HDD operations. Should the release of drilling fluids occur in a waterbody, then Algonquin may utilize inert, non-toxic loss circulation materials such as mica, wood fibers, and other types of cellulous-like cotton dust to attempt to plug the fracture by pumping these products down hole through the drill string as part of the drilling fluid mixture. Impacts of a drilling mud release into a waterbody generally would be less than those associated with any drilling mud recovery operation and less than potential impacts associated with an open-cut crossing that would otherwise be required.

Should an inadvertent release occur, Algonquin would implement the following to minimize potential impacts:

- monitor mud pressures down-hole to ensure they do not get too high for the materials and depth of cover being penetrated;
- conduct frequent visual inspections of the drill path on the surface so that timely detection of a release can be achieved;
- stop the mud pumps once an inadvertent release has been detected so that the release does not spread and secure the perimeter with straw bales, silt fence, sand bags, or other means; and
- notify Algonquin's environmental monitors to ensure efforts are being undertaken to protect the waterbody and any associated wetlands.



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**Figure 2.3.1-4**  
**AIM Project**  
Conceptual Horizontal Directional Drill  
Waterbody Crossing



Algonquin has developed a Best Drilling Practices, Monitoring, and Clean-up of Horizontal Directional Drilling Inadvertent Returns Plan (BDP Plan) for monitoring the HDD program for the AIM Project (see appendix J). We reviewed the BDP Plan, found it to be acceptable, and have determined that Algonquin's adherence to the requirements in the BDP Plan would reduce the potential impacts of the HDDs, including an inadvertent release of drilling fluid.

To date, Algonquin has not provided a contingency plan that incorporates another location or another construction methodology for each HDD crossing. Therefore, if an HDD in its proposed location proves unsuccessful, Algonquin would be required to identify a new location for the crossing or new methodology, and request approval for the new location or methodology with all applicable agencies (see section 4.3.2.3).

Algonquin evaluated the feasibility of crossing other waterbodies using the HDD method in lieu of the conventional dry crossing methods described above. Factors in HDD design include the availability of a straight and relatively low relief laydown area for the pullback pipe section; the availability of large work areas at the HDD entry and exit points; surrounding terrain; land use; and operation concerns. In addition, for the larger diameter pipeline segments (i.e., 42- and 36-inch), the minimum drill length is quite long (around 2,000 feet or more). Some of the other major limiting factors in the more densely populated areas of the Project included new temporary impacts on nearby residences, direct impacts on residential homes, and the need to acquire new easement rights for the permanent right-of-way for operation and maintenance of the pipeline. Based on information from Algonquin, our review of Project mapping, and information we obtained during visits to the Project area, we conclude that the use of the HDD method at all waterbody crossings would be either technically infeasible, impractical, or would not result in a clear environmental advantage to the proposed dry crossing methods.

### **Wetland Construction Methods**

Construction of the Project would result in 160 wetland crossings, including 76 in New York and 84 in Connecticut. In some cases the Project facilities would include multiple crossings of the same wetland. There would be no wetland impacts in Rhode Island or Massachusetts (see table K-1 in appendix K). Wetland crossings would be accomplished in accordance with Algonquin's E&SCP, which is consistent with the FERC Procedures, with one exception. In instances where wetlands are dry enough to support skids and pipe, Algonquin's E&SCP proposes to excavate the trench prior to the pipeline assembly. Otherwise, after the pipeline is assembled, equipment would not be able to access the area where trenching would occur nor would there be sufficient construction workspace to safely excavate the trench. See section 4.4.4 for additional discussion.

Construction methods would minimize the extent and time that construction equipment operates in wetland areas. When wetland soils are inundated or saturated to the surface, the pipeline trench would be excavated across the wetland by equipment supported on wooden swamp mats to minimize the disturbance to wetland soils. In wetlands that have firm substrates, and are unsaturated and not frozen, the top 12 inches of wetland soil over the trench line would be segregated. Trench spoil would be temporarily piled in a ridge along the pipeline trench. Gaps in the spoil pile would be left at appropriate intervals to provide for natural circulation or drainage of water. While the trench is excavated, where practicable, the pipeline would be assembled in a staging area located in an upland area. If dry conditions exist within the wetland, the pipe fabrication would occur in the wetland. For inundated or saturated wetland conditions, pipe strings would be fabricated on one bank and either pulled across the excavated trench in the wetland, floated across the wetland, or carried into place and submerged into the trench. After the pipeline is lowered into the trench, wide track bulldozers or backhoes supported on swamp mats would be used for backfill, grading, and final cleanup. This method would minimize the amount of equipment and travel in wetland areas. If conditions allow, such as low flow or unsaturated soils, normal

cross-country construction practices would be used in wetlands. A complete description of construction methods can be found in Algonquin's E&SCP. The E&SCP also includes measures to mitigate unavoidable construction-related impacts on wetlands (e.g., cutting vegetation above ground level, returning wetland contours and drainage patterns to preconstruction configurations, installing sediment barriers immediately after initial ground disturbance, segregating topsoil from the trenchline, using low ground weight equipment or operating equipment on mats, etc.). These construction methods and mitigation measures are part of the proposed action and included in the environmental analysis in section 4.4.

ATWS may be needed adjacent to specific wetlands to facilitate the pipeline crossing. The staging areas are in addition to the typical construction right-of-way and may be used for the assembly and fabrication of the pipe section that would cross the wetland area. These work areas would be located at least 50 feet away from the wetland edge, topographic and other site-specific conditions permitting. If topographic conditions do not permit a 50-foot setback, these areas would be located at least 10 feet away from the wetland. In some instances, the setbacks would not be able to be maintained due to construction limitations, such as slope and road crossing requirements. In those cases, Algonquin has requested modifications to the FERC Procedures. A list of ATWS within 50 feet of a wetland and its purpose is provided in section 4.4.4.

### **2.3.2 Aboveground Facility Construction Procedures**

The AIM Project aboveground facilities would be constructed in compliance with the same federal regulations and guidelines as the pipeline facilities, and in accordance with the specific requirements of applicable federal and state approvals. Construction activities associated with these facilities would include clearing, grading, installing concrete foundations, erecting metal buildings, and installing piping, metering facilities, and appurtenances. Initial work at the new M&R stations would focus on preparing the sites for equipment staging, fabrication, and construction. Following foundation work, station equipment and structures would be brought to the site and installed, using any necessary trailers or cranes for delivery and installation. Equipment testing and start-up activities would occur on a concurrent basis.

The construction and restoration methods and procedures in Algonquin's E&SCP would be followed, as applicable, for the aboveground facilities as well.

## **2.4 CONSTRUCTION SCHEDULE AND WORK FORCE**

Construction of the Project pipeline facilities, new M&R stations, and modifications to Algonquin's existing compressor stations and M&R stations would occur over a 1.5-year period to accommodate multiple work locations and the need for scheduled system outages for the numerous tie-ins along Algonquin's system. Construction would begin in the 1<sup>st</sup> Quarter of 2015 with a projected in-service date of November 2016. Table 2.4-1 provides a preliminary construction schedule by year and construction spread.

While the overall schedule for the AIM Project is about 1.5 years of construction, pipeline construction generally proceeds at rates ranging from several hundred feet to 1 mile per day. Due to the assembly-line method of construction, construction activities in any one area would last from several weeks to several months on an intermittent basis.

TABLE 2.4-1						
Preliminary Construction Schedule for the AIM Project						
AIM Project Facilities	Approximate MP Range	Start	Finish	Approximate Length (miles)	Estimated Number of Construction Personnel <sup>a</sup>	EI Responsibility <sup>b</sup>
PIPELINE CONSTRUCTION SPREADS						
2015 Pipeline Construction Spreads						
Construction Spread 1 – Hudson River HDD and mainline pipeline segments within new permanent easement in New York	2.6 to 5.5	March 2015	Oct. 2015	2.9	Mainline 180/ HDD 178	2015 EI A
Construction Spread 2 – I-84/Still River HDD	1.4 to 2.1	March 2015	Oct. 2015	0.7	86	2015 EI A
Construction Spread 3 – Cromwell Discharge (Line-36A Loop Extension)	0.0 to 2.0	April 2015	Oct. 2015	2.0	201	2015 EI B
Construction Spread 4 – E-1 System Take-up and Relay/ E-1 System Loop	0.0 to 9.1/ 0.0 to 1.3	April 2015	Oct. 2015	9.1/1.3	Take-up and Relay 158/ Loop 133	2015 EI C/ EI D
2016 Pipeline Construction Spreads						
Construction Spread 1 <sup>c</sup> – Haverstraw to Stony Point/Stony Point to the Tomkins Cove	0.0 to 3.3/ 0.0 to 2.6	March 2016	Oct. 2016	5.9	257	2016 EI A
Construction Spread 2 <sup>c</sup> – Mainline Take-up and Relay (East of the Hudson River to Yorktown)	5.5 to 12.3	March 2016	Oct. 2016	6.8	235	2016 EI B/ EI C
2015 Construction Spread 3 <sup>c</sup> – Southeast to MLV Take-up and Relay	0.0 to 4.4	March 2016	Oct. 2016	4.4	227	2016 EI D
2015 to 2016 Pipeline Construction Spread						
West Roxbury Lateral	0.0 to 5.1	May 2015	Oct 2016	4.9	162	2015 EI F/ 2016 EI G
TOTAL					1,817	
ABOVEGROUND FACILITIES						
Existing Compressor Station Modifications	NA					
New York						
Stony Point Compressor Station <sup>d</sup>		March 2016	Oct. 2016	NA	76	2016 EI A
Southeast Compressor Station <sup>d</sup>		March 2016	Oct. 2016	NA	76	2016 EI D
Connecticut						
Oxford Compressor Station		May 2016	May 2016	NA	14	2016 EI E
Chaplin Compressor Station		March 2015	Oct. 2015	NA	38	2015 EI B
Cromwell Compressor Station		March 2015	Oct. 2015	NA	76	2015 EI B
Rhode Island						
Burrillville Compressor Station		March 2015	Oct. 2015	NA	76	2015 EI F

TABLE 2.4-1 (cont'd)						
Preliminary Construction Schedule for the AIM Project						
AIM Project Facilities	Approximate MP Range	Start	Finish	Approximate Length (miles)	Estimated Number of Construction Personnel <sup>a</sup>	EI Responsibility <sup>b</sup>
<b>New M&amp;R Stations</b>	NA					
Connecticut						
Oakland Heights M&R Station		April 2016	Oct. 2016	NA	11	2016 EI E
Massachusetts						
Assonet M&R Station		April 2015	Oct. 2015	NA	11	2015 EI F
West Roxbury M&R Station		April 2016	Oct. 2016	NA	11	2016 EI G
<b>Existing M&amp;R Station Modifications</b>	NA					
New York						
Stony Point M&R Station		April 2016	Oct. 2016	NA	0	2016 EI A
Peekskill M&R Station		April 2015	Oct. 2015	NA	13	2015 EI A
Cortlandt M&R Station		April 2016	Oct. 2016	NA	10	2016 EI A
Connecticut						
West Danbury M&R Station		April 2016	Oct. 2016	NA	11	2016 EI F
Southbury M&R Station		April 2015	Oct. 2015	NA	11	2015 EI B
Waterbury M&R Station		April 2016	Oct. 2016	NA	10	2016 EI F
North Haven M&R Station		April 2016	Oct. 2016	NA	10	2016 EI F
Guilford M&R Station		April 2015	Oct. 2015	NA	10	2015 EI B
Farmington M&R Station		April 2016	Oct. 2016	NA	11	2016 EI F
Glastonbury M&R Station		April 2015	Oct. 2015	NA	11	2015 EI B
Middletown M&R Station		April 2015	Oct. 2015	NA	10	2016 EI F
Montville M&R Station		April 2015	Oct. 2015	NA	10	2016 EI F
Salem Pike M&R Station		April 2015	Oct. 2015	NA	11	2016 EI F
Willimantic M&R Station		April 2015	Oct. 2015	NA	12	2016 EI F
Putnam M&R Station		April 2016	Oct. 2016	NA	11	2016 EI F
Pomfret M&R Station		April 2016	Oct. 2016	NA	11	2016 EI F

TABLE 2.4-1 (cont'd)						
Preliminary Construction Schedule for the AIM Project						
AIM Project Facilities	Approximate MP Range	Start	Finish	Approximate Length (miles)	Estimated Number of Construction Personnel <sup>a</sup>	EI Responsibility <sup>b</sup>
Massachusetts						
Mystic M&R Station		April 2015	Oct. 2015	NA	11	2015 EI F
Middleborough M&R Station		April 2015	Oct. 2015	NA	11	2015 EI F
North Fall River M&R Station		April 2016	Oct. 2016	NA	11	2016 EI F
New Bedford M&R Station		April 2016	Oct. 2016	NA	10	2016 EI F
Brockton M&R Station		April 2015	Oct. 2015	NA	13	2015 EI F
Norwood M&R Station		April 2015	Oct. 2015	NA	10	2015 EI F
Needham M&R Station		April 2016	Oct. 2016	NA	11	2016 EI F
Wellesley M&R Station		April 2015	Oct. 2015	NA	11	2015 EI F
<b>M&amp;R Station Removal</b>	NA					
Connecticut:						
Greenville M&R Station		April 2016	Oct. 2016	NA	10	2016 EI F
<b>TOTAL</b>					<b>649</b>	
<sup>a</sup> This number reflects the total anticipated peak construction workforce of craft workers. Algonquin will also add three full-time permanent operational workers, which are not shown in this table. <sup>b</sup> At least seven EIs would be employed (A through G). Identifies the facilities under each of the EI's responsibility. <sup>c</sup> Certain complex pipeline crossings (e.g., road, streams, railroads) may be constructed during the April to October 2015 construction season. Winter clearing in November 2015 to February 2016 may be necessary to address time of year restrictions. <sup>d</sup> Civil site work at these two compressor stations will be completed in the April to October 2015 time frame. NA = Not applicable						

## 2.5 ENVIRONMENTAL TRAINING AND INSPECTION FOR CONSTRUCTION

In preparing construction drawings and specifications for the Project, Algonquin would incorporate all mitigation measures identified in its permit applications, as well as additional requirements of federal, state, and local agencies. Algonquin would provide the construction contractors with copies of applicable environmental permits as well as copies of “approved for construction” environmental construction alignment sheets and construction drawings and specifications.

Consistent with the FERC guidelines, Algonquin would conduct environmental training for its construction personnel, including EIs, contractors, and their employees, regarding proper field implementation of its E&SCP, SPCC Plan, and other project-specific plans and mitigation measures. The training would be given before the start of construction and throughout the construction process, as needed. The EIs and all other construction personnel are expected to play an important role in maintaining strict compliance with all permit conditions to protect the environment during construction.

As outlined in Algonquin’s E&SCP, full time EIs would be designated by Algonquin during active construction or restoration. Table 2.4-1 indicates the number of EIs proposed by year and

construction spread as well as the facilities under each EIs responsibility. The EIs would have peer status with all other activity inspectors and would report directly to the Resident Engineer/Chief Inspector who has overall authority on the construction spread. The EIs would have the authority to stop activities that violate the environmental conditions of the FERC certificate (if applicable), other federal and state permits, or landowner requirements, and to order corrective action.

Although Algonquin has stated that sufficient qualified EIs would be available to implement their environmental inspection program, it has agreed to participate in a third-party Environmental Compliance Monitoring Program for sensitive environmental areas of the AIM Project. Under this program, Algonquin would fund a contractor, to be selected and managed by the FERC staff, to provide environmental compliance monitoring services. The FERC Third-party Compliance Monitor would provide daily reports to the FERC staff on compliance issues and make recommendations to the FERC Project Manager on how to deal with compliance issues and construction changes, should they arise. FERC staff would also conduct periodic inspections. As discussed in section 4.0, use of a third-party Environmental Compliance Monitoring Program would be particularly appropriate along the Haverstraw to Stony Point Take-up and Relay, Stony Point to Yorktown Take-up and Relay, Southeast to MLV 19 Take-up and Relay, and West Roxbury Lateral segments and related aboveground facilities due to concerns about construction in residential and commercial areas, the Hudson River crossing, and potential blasting. Development of the program would occur prior to construction.

After construction, Algonquin would conduct follow-up inspections of all disturbed upland areas after the first and second growing seasons to determine the success of restoration and would monitor the success of wetland revegetation annually for the first 3 years (or as required by permits) after construction, or longer, until wetland revegetation is successful. To ensure the restoration of all areas affected by the Project, we would continue to conduct oversight inspection and monitoring following construction. If it is determined that any of the proposed monitoring timeframes are not adequate to assess the success of restoration, Algonquin would be required to extend its post-construction monitoring programs.

Additionally, as discussed further in section 4.12.1, PHMSA is mandated to provide pipeline safety under 49 USC 601. PHMSA administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. PHMSA develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety.

## **2.6 OPERATION, MAINTENANCE, AND SAFETY CONTROLS**

Algonquin would operate and maintain the newly constructed pipeline facilities in the same manner as they currently operate and maintain their existing systems in compliance with PHMSA regulations provided in 49 CFR 192, the FERC guidance at 18 CFR 380.15, and the maintenance provisions in Algonquin's E&SCP. Algonquin would add three full-time permanent workers for operation of the proposed and modified facilities.

### **2.6.1 Pipeline Facilities**

The pipeline would be patrolled on a routine basis and personnel well qualified to perform both emergency and routine maintenance on interstate pipeline facilities would handle emergencies and maintenance related to:

- erosion and wash-outs along the right-of-way;
- settling, undermining, or degradation of repaired ditch line in streets or parking lots;

- performance of water control devices such as diversions;
- condition of banks at stream and river crossings;
- third-party activity along the pipeline right-of-way; and
- any other conditions that could threaten the integrity of the pipeline.

The applicable local operations supervisors would be notified of any conditions that need attention. Significant conditions would be reported to the pipeline owners. Corrective measures would be performed as needed.

The pipeline cathodic protection system would also be monitored and inspected periodically to ensure proper and adequate corrosion protection. The pipeline would be designed to allow the use of internal inspection technology. Algonquin would take appropriate responses to conditions observed during internal inspections as necessary.

The pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. Markers would clearly indicate the presence of the pipeline and provide a telephone number where a company representative can be reached in the event of an emergency or prior to any excavation in the area of the pipeline by a third party. As part of its effort to prevent any third-party damage on the pipeline, Algonquin currently participates in the One Call system in all states where Algonquin has operational facilities.

During operation, the pipeline would be internally inspected and cleaned using “pigs” inserted and retrieved from the pipeline at aboveground pig launcher/receiver facilities. As a cleaning device, pigs can also be used to remove debris that accumulates in the pipeline. We received comments concerning the potential buildup of decay products within the pipeline and the risk of releasing these products to the environment during pipeline maintenance and pigging activities. Algonquin conducts annual inspections and regular cleaning of its operational pipelines. The pig receivers have a collection basin or trap that catches the liquids and solids that are removed from the pipe during the pig run. Any liquids or solids removed during these cleanings would be collected and treated as hazardous material that would be disposed of at a licensed facility in accordance with federal, state, and local regulations (see section 4.11.1.3).

## **2.6.2 Compressor Stations**

Algonquin would continue to operate and maintain the modified compressor stations in accordance with PHMSA requirements and standard procedures designed to ensure the integrity and safe operation of the facilities and to maintain firm natural gas transportation service. Standard operations at compressor stations include such activities as the calibration, maintenance, and inspection of equipment, as well as the monitoring of pressure, temperature, and vibration data, and traditional landscape maintenance such as mowing and the application of fertilizer. Standard operations also include the periodic checking of safety and emergency equipment and cathodic protection systems.

## **2.6.3 M&R Station Sites and other Aboveground Facilities**

Algonquin personnel would perform routine checks of the new and modified facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and preventative maintenance of equipment. Safety equipment, such as pressure-relief devices, would be tested for proper operation. Corrective actions would be taken for any identified problem.

### 3.0 ALTERNATIVES

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As required by NEPA, FERC policy, and CWA 404(b)(1) Alternative Analysis, we evaluated alternatives to the Project to determine whether an alternative would be environmentally preferable and/or technically and economically feasible to the proposed action. We evaluated the no action alternative, energy alternatives, system alternatives, route alternatives and variations, and aboveground facility alternatives. We compared each alternative to the Project using three key criteria.

1. Does the alternative have the ability to meet the objectives of the proposed action?
2. Is the alternative technically and economically feasible and practical?
3. Does the alternative offer a significant environmental advantage over the Project?

With regard to the first criterion and for the purposes of NEPA, Algonquin's stated objectives for the Project are:

- provide an additional 342,000 Dth/d of additional natural gas supplies in southern New England and satisfy Algonquin's precedent agreements to deliver natural gas to the Project Shippers by November 2016<sup>1</sup>;
- eliminate capacity constraints on existing pipeline systems in New York State and southern New England; and
- provide access to growing natural gas supply areas in the Northeast region to increase competition and reduce volatility in natural gas pricing in southern New England.

It is important to note that not all conceivable alternatives are technically feasible or practical. Some alternatives may be incapable of being implemented due to limits on existing technologies, constraints of system capacities, or logistical considerations, while others may be impractical because sites are unavailable or cannot be developed for the proposed use. Additionally, it is necessary to recognize the environmental advantages and disadvantages of the proposed action in order to focus the analysis on reasonable alternatives with the potential to provide a significant environmental advantage over the Project. Some alternatives may reduce impacts on resources that are not relevant to the analysis or do not provide a significant environmental advantage over the proposed action. Other alternatives may reduce impacts on one resource but increase impacts on others.

Our analysis of each alternative as described in the subsections below is based on information provided by Algonquin and reviewed by FERC staff; our review of aerial photographs, U.S. Geological Survey (USGS) topographic maps, and other publicly available information; input from cooperating and other agencies; and our site visits, including a flyover of the Project area. Unless otherwise noted, we used the same desktop sources of information to standardize comparisons between the Project and each alternative. As a result, some of the information presented in this section relative to the Project may differ from information presented in section 4.0, which is based on Project-specific data derived from field surveys and engineered drawings.

Algonquin participated in our pre-filing process during the preliminary design stage for the Project (see section 1.4). This process emphasized identification of potential stakeholder issues, as well as identification and evaluation of alternatives that could avoid or minimize impacts. During this process,

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<sup>1</sup> For the purposes of CWA permitting and section 404(b)(1) guidelines, the Project purpose has been defined as "expansion of the existing pipeline system from an interconnection at Ramapo, New York to deliver up to 342,000 Dth/d of natural gas transportation service to the Connecticut, Rhode Island, and Massachusetts markets."



Algonquin made several modifications to its proposed pipeline route to address stakeholder concerns. The majority of route changes were made to avoid conflicts with existing land uses or to increase the distance of the pipeline from residences and commercial business, recreation areas, or other infrastructure. These changes were subsequently made part of Algonquin's proposed route when it filed its FERC application, and are presented in this EIS. Route variations that were incorporated into the proposed route are identified in section 3.5.4.

Through the application of evaluation criteria and subsequent environmental comparisons, each alternative was considered until it was clear that the alternative was not reasonable or would result in greater environmental impacts that could not be readily mitigated. Those alternatives that appeared to be viable with less than or similar levels of environmental impact are reviewed in the text below.

### **3.1 NO-ACTION ALTERNATIVE**

The Commission has two courses of action in processing applications under section 7 of the NGA: 1) deny the requesting action (the no-action alternative), or 2) grant a Certificate, with or without conditions. Under the no-action alternative, the short- and long-term environmental impacts described in this EIS would not occur, but the objectives of the Project would not be met. The Project would create an additional 342,000 Dth/d of natural gas delivery from growing supply areas in the Northeast region to local distribution companies and municipal utilities (i.e., the Project Shippers) in southern New England. This would help meet existing and future demand for natural gas in the Project area, eliminate supply constraints on existing systems, and increase competition in regional energy markets. The Project additionally would provide new delivery points for local gas utilities in Connecticut and Massachusetts, which would provide natural gas in areas where it is needed and enhance the reliability of local distribution systems, particularly in Boston.

If Algonquin's proposed facilities are not constructed, the Project Shippers may need to obtain an equivalent supply of natural gas from new or existing pipeline systems. In response, Algonquin or another natural gas transmission company would likely develop a new project or projects to provide the volume of natural gas contracted through the Project's binding precedent agreements with the Project Shippers. Alternatively, customers of the Project Shippers could seek to use alternative fuel or renewable energy sources, which could require new facilities. In either case, construction of new pipelines or other energy infrastructure would result in environmental impacts that could be equal to or greater than those of the Project. For these reasons, the no-action alternative would not be preferable to or provide a significant environmental advantage over the Project.

### **3.2 ENERGY ALTERNATIVES**

#### **3.2.1 Energy Conservation**

Energy conservation measures, as encouraged or required by federal and state law, have and will likely continue to play an important role in reducing energy demand in the United States. At the federal level, for example, the Energy Policy Act of 2005 (EPAc) contained provisions for diversifying America's energy supply, reducing dependence on foreign sources of energy, increasing residential and business energy efficiency and conservation, improving vehicular energy efficiency, and modernizing domestic energy infrastructure. EPAc additionally directed the U.S. Secretary of Energy to conduct research and develop programs for energy efficient commercial applications (U.S. Congress, 2005).

Several laws enacted since EPAc have enhanced the federal role in energy conservation and efficiency. The U.S. Congress passed the Energy Independence and Security Act of 2007, for example, to increase the efficiency of products, buildings, and vehicles; protect consumers; and improve federal energy performance by establishing new incentive programs and expanding certain programs created

under EPA Act (U.S. Congress, 2007). According to the U.S. Department of Energy (DOE), key highlights of the Energy Independence and Security Act of 2007 include improved corporate fuel efficiency, a renewable fuels standard, and new energy efficiency standards for lighting and other appliances, such as lamps, dishwashers, dehumidifiers, and clothes washers (Congressional Research Service, 2007).

Two bills containing energy provisions were passed by the U.S. Congress between October 2008 and February 2009 in response to the economic downturn in the United States: the Energy Improvement and Extension Act and the American Recovery and Reinvestment Act of 2009. The Energy Improvement and Extension Act included provisions to extend tax credits for energy-efficient residential properties and appliances, bicycle commuting, and renewable and alternative fuels usage, to limit consumption and increase efficiency (U.S. Congress, 2008). The American Recovery and Reinvestment Act of 2009 provided more than \$16 billion for the DOE's Office of Energy Efficiency and Renewable Energy for the Weatherization Assistance Program, Energy Efficiency and Conservation Block Grants, Energy Efficient Appliance Rebate and ENERGY STAR® programs, and various alternative fuel programs for both transportation and energy production (U.S. Congress, 2009).

In addition to the federal programs, state-led initiatives have contributed to or encouraged energy conservation and efficiency in the Project area. One of the goals identified in the 2013 Connecticut Comprehensive Energy Strategy (CES), for example, is an expanded commitment to reducing energy consumption through "all cost-effective" energy efficiency programs (CTDEEP, 2013a). Other objectives promote new financing mechanisms for energy conservation and efficiency, performance-based rates of return for Connecticut utilities, and efficiency standards for new building construction or retrofits. The CES notes that a reduction in energy consumption through conservation and efficiency is one of the most cost-effective ways to lower Connecticut's contribution to air pollution.

Massachusetts, Rhode Island, and New York State similarly have implemented energy conservation plans which include efficiency initiatives. Each of the plans enumerates a series of policy objectives or actions designed to reduce energy consumption. The Massachusetts Clean Energy and Climate Plan for 2020, for example, promotes all cost-effective energy efficiencies, advanced building energy codes, and an expanded renewable portfolio standard for electricity (MAEOWEA, 2010). It also includes a Building Energy Rating and Labeling program designed to facilitate "apples-to-apples" comparisons of energy efficiency among and between buildings. Rhode Island's Comprehensive Energy, Conservation, and Affordability Act of 2006 requires local utilities to invest in all cost-effective energy efficiencies, prepare long- and short-term energy efficient procurement plans, and purchase least cost-supply and demand resources (Rhode Island General Assembly, 2006). The 2009 New York State Energy Plan encourages energy efficiency through a variety of policies and objectives, including the coordination of end-use efficiency programs, improved energy efficiency in public buildings, and improved training and compliance initiatives (New York State Energy Planning Board, 2009).

EPA Act and the other federal and state programs collectively promote increased energy efficiency and conservation by supporting new technologies and increasing funds for research and conservation. However, while these initiatives may minimize energy use, they are not expected to eliminate the increased demand for energy or natural gas in the Project area. The implementation and success of energy conservation and efficiency programs in curtailing energy use is a long-term goal requiring large-scale public education efforts, significant incentives, and government intervention extending well beyond the timeframe of the proposed Project. We also note that each of the states in the Project area recognizes energy conservation as one component of a larger portfolio of solutions, including increased use of natural gas, to provide clean, secure, reliable, and less expensive energy. Therefore, while energy conservation and efficiency would reduce demand for new energy supplies to some degree, we conclude it would not eliminate the need for additional natural gas supplies in southern New England.

### 3.2.2 Renewable Energy

Renewable energy sources, including wind, hydropower, biomass, solar, and tidal and wave energy, are another long-term fuel source alternative to natural gas that have the advantage over fossil fuels of reducing or eliminating the emissions, including GHG emissions, associated with the burning of natural gas and other fossil fuels. The DOE's Energy Information Administration (DOE/EIA) (2013) projects rapid growth in renewable fuel consumption due primarily to the implementation of a federal renewable fuels standard for transportation fuels and state renewable portfolio standard programs for electricity generation. Nationally, the share of U.S. electricity generation from renewable energy is projected to increase from 13 percent in 2011 to 16 percent in 2040, with wind, solar, and biomass accounting for most of the growth.

We received several comments on the draft EIS citing studies by researchers at Stanford University and the University of California at Davis that concluded that the world can meet all of its energy needs with renewables—chiefly wind, water, and solar power—as early as 2030 and, as a consequence, there is no need for natural gas. Authors Jacobson, Delucchi, and others have published papers that have identified a path for replacing fossil fuel-based energy with wind, water, and solar power. In a paper in 2011, Jacobson and Delucchi did not conclude that the world could run solely on renewables by 2030. Instead, this paper identified a path for replacing fossil fuel-based energy with wind, water, and solar power using a two-step process by the year 2050. Specifically, the authors indicate that the obstacles to achieving this worldwide energy transformation are primarily social and political, not technological, and further note that “[w]ith broad-based policies and social changes, it may be possible to convert 25 percent of the current energy system to [wind, water, and solar power] in 10–15 years and 85 percent in 20–30 years, and 100 percent by 2050.” A paper by Jacobson et al. (2013) concluded that all of New York State's energy infrastructure could be converted to renewable power by the year 2030. The study examined the technical and economic feasibility, and the public policies needed, to convert New York State's energy infrastructure in all sectors to one powered by wind, water, and sunlight by the year 2050. The authors expected that the fraction of new electric power generation from wind, water, and solar power would increase starting in 2013 such that all new electric generation would come from wind, water, and solar power sources by 2020. Existing conventional generation would be phased out gradually, but no later than 2050. Similarly, the authors expect that new heating and cooling technologies would be wind, water, and solar power-based by 2020, and existing heating and cooling technologies would be replaced over time, but no later than 2050. Jacobson et al. (2013) did not conclude that New York State could run solely on renewables by 2030. Implicit in the conclusions of the papers by Jacobson and others is a need to continue operating the existing mix of fossil fuel-based energy use through the year 2050.

An analysis of renewable energy sources as an alternative to the proposed Project, as well as our conclusions, is provided below.

#### Wind

Wind power is a proven technology that has experienced significant advances in recent years, including reduced installation costs, improved turbine performance, and reduced maintenance costs. Although wind projects have no emissions, such developments can affect wildlife, such as birds, as well as other resources. Additionally, many of the windiest sites in the Project region tend to be located along shorelines that are challenging to access, densely populated, and highly valued for other uses.

Current wind generation capacities in the Project area by state are 0 megawatts (MW) for Connecticut, 9 MW for Rhode Island, 103 MW for Massachusetts, and 1,638 MW for New York State (American Wind Energy Association, 2013). In southern New England, most of the existing wind farms are small operations that individually generate less than 15,000 kilowatts (kW) of power. In New York

State, there are several large operating wind farms in upstate areas, such as the Maple Ridge Wind Farm (320 MW) in Lewis County and Noble Clinton Windpark in Franklin County (NYSDEC, 2014g). In general, the major wind farms in New York are located in the northern and western portions of the state far from major downstate load areas.

Several new wind farm projects have been permitted or proposed in the Project area, particularly offshore. Cape Wind Associates, for example, plans to install 130 turbines off the coast of Cape Cod in Nantucket Sound. This project, which has been approved by federal and state regulatory agencies, will be capable of generating up to 468 MW of power. Financing of the project is expected to be completed in the second half of 2014. Construction of the project is expected to begin in 2015 and completed in 2016 (Cape Wind, 2014; Mohl, 2014).

Deepwater Wind proposes to construct two offshore facilities, the Block Island Wind Farm and the Deepwater Wind Energy Center, each of which would provide power to the Project area. The Block Island Wind Farm is a proposed 30 MW facility that would be built about 3 miles southeast of Block Island in Rhode Island state waters. The wind farm would connect to onshore electric transmission facilities in Narragansett, Rhode Island via a 21-mile submarine cable. Construction of the Block Island Wind Farm is planned to begin in 2015 (Deepwater Wind, 2014a).

Deepwater ONE, if approved and constructed, would be the first, 1,000 MW-scale offshore regional energy center to be built in the United States. In 2013, Deepwater Wind won an exclusive right from the U.S. Department of the Interior to develop wind facilities within a 256-square-mile area on the outer continental shelf in the Atlantic Ocean. As currently envisioned, the project would consist of 150 to 200 turbines to be built about 30 miles east of Montauk, New York between Block Island and Martha's Vineyard. The facility would connect to the Long Island Power Authority's existing transmission grid via a 98-mile subsea cable, which would make landfall on Long Island. Deepwater ONE would produce between 900 and 1,200 MW of power for sale in Long Island and southeastern New England. Construction of the project could begin as early as 2017 with operations beginning as early as 2018 (Deepwater Wind, 2014b; Marcacci, 2013).

Further south in New York State, the New York Power Authority, Long Island Power Authority, and Consolidated Edison are developing a proposal to build a wind farm about 13 miles offshore of the western end of the Rockaway Peninsula in the New York Bight. The Bureau of Ocean and Energy Management currently is evaluating a lease application from the project proponents for lands on the outer continental shelf, and may proceed with a competitive lease auction for these lands. If approved and constructed, the wind farm would generate 350 MW of electricity (with the potential to expand to 700 MW in later phases) for use in the New York City and Long Island markets (Bureau of Ocean and Energy Management, 2014; Long Island–New York City Wind Farm Project, 2014). Although this project has demonstrated continued interest, its development is still in its early stages and its future is uncertain. Additional site-specific engineering and environmental studies need to be completed, agencies need to release a request for proposal to select a private developer to build and operate the wind farm, the filing of permit applications needs to be made, and environmental reviews need to be conducted.

It is likely that wind projects will continue to be pursued in the Northeast region assuming continued financial incentives, state and public support, improvements in technology, and available transmission capacity for new electricity. In the long-term, wind energy may be able to replace some of the demand in the Project area for electricity generation from fossil-fuel sources. However, in the short-term, sufficient wind energy is not available in the Project vicinity that could provide the 342,000 Dth/d (100,205 MWh or 8,350 MW per 12-hour day) of energy that would be provided by the proposed Project. Increased wind energy would not meet the objectives of the Project, which would provide additional natural gas supplies to local distribution companies and municipal utilities for residential and commercial

uses, eliminate capacity constraints on existing natural gas transmission systems, and provide access to new natural gas supplies. The Project additionally would leverage existing delivery points on the Algonquin system and create new delivery points in southern New England at points where natural gas supplies are needed. In contrast, new wind facilities could require upgrades to or construction of new electric transmission facilities to transport power to market. It is unlikely that the environmental impacts associated with construction of these facilities would be significantly less than those of the Project.

For all the reasons discussed above, the use of wind energy would not meet the Project objectives or provide a significant environmental advantage over the Project.

## **Hydroelectric**

Hydroelectric generation is fully commercialized, including run-of-river and large impoundment facilities ranging in electricity generation capacity from less than one to hundreds of MWs. Hydroelectric generation in the Project area in 2012 was 4 gigawatt (GW) hours (GWh) in Rhode Island, 312 GWh in Connecticut, 912 GWh in Massachusetts, and 24,652 GWh in New York State (National Hydropower Association, 2014).

The DOE/EIA (2013) projects that hydropower will continue as a leading source of renewable electricity generation in the U.S. through 2040, but little new hydroelectric capacity is expected to be developed in this period. Nevertheless, several recent, small-scale hydroelectric projects have been licensed or proposed in southern New England and New York State. New England Hydropower Company, LLC, for example, has been granted five preliminary permits from the FERC to develop new, small-scale, renewable electricity generation facilities in Connecticut, Massachusetts, and Rhode Island. If all five projects are constructed, the peak capacities of the new facilities would range from 30 to 300 kW (New England Hydropower Company, LLC, 2013).

In addition to small-scale projects, there have been several recent proposals to construct high-voltage transmission lines to transport hydroelectric power produced in Canada to New England and New York State. The Northern Pass Transmission Line Project is a proposal to construct 153 miles of high voltage, direct current, 1,200 MW transmission line from the U.S./Canadian border to Franklin, New Hampshire. From there, about 34 miles of alternating current transmission line would be built to interconnect with existing grid facilities in Deerfield, New Hampshire. Northern Pass submitted an application to DOE in October 2010 and filed an amended application in June 2013 (Northern Pass Transmission, LLC, 2014).

The New England Clean Power Link Project is a recently announced proposal to construct about 150 miles of high voltage, direct current, 1,000 MW transmission line from the U.S./Canadian Border to a location in Ludlow, Vermont. The transmission line would interconnect with the Vermont Electric Power Company's existing transmission grid for delivery service in Vermont and throughout the New England market. TDI New England has applied for permit applications and construction is planned to begin in 2016, with a projected completion date of 2019 (TDI New England, 2014).

Several large-scale projects have been announced to transport hydroelectric power from Canada to New York State. These include the West Point Transmission and Champlain Hudson Power Express Projects. The West Point Transmission Project is a proposal to construct an 80-mile-long, 1,000 MW transmission line between Athens and Buchanan, New York. West Point Partners, LLC (WPP) is in the process of submitting federal and state permit applications and is expecting to file an amendment to its Article VII application in early 2015 (WPP, 2014). The Champlain Hudson Power Express Project is a proposal to construct over 330 miles of 1,000 MW subterranean transmission line from Quebec to Astoria, New York. Key permits have been obtained and construction is planned to begin in 2015 with an in service date of 2018 (Transmission Developers, Inc., 2014). The projects would service downstate

markets in New York State, but would not provide power to southern New England as currently proposed.

Hydroelectric power may be able to replace some of the demand in the Project area for new electricity generation. However, regulatory review of these new projects is ongoing and therefore, their future is uncertain. Also, as is the case with wind, hydroelectric power would not meet the objectives of the Project. For example, new or expanded hydroelectric facilities would not provide additional natural gas supplies to southern New England, provide access to new source areas, utilize existing infrastructure, or provide new delivery points where natural gas supplies are needed. We additionally note that new hydroelectric facilities would require upgrades to or construction of new transmission facilities to bring power to market. It is unlikely that the environmental impacts associated with construction of these transmission facilities would be significantly less than those of the Project. For all these reasons, the use of hydroelectric energy would not be practical or provide a significant environmental advantage over the Project.

### **Biomass**

Combustion of biomass (e.g., wood, crops, landfill gas, or solid wastes) is a proven technology using biomass feedstock. Each of the states in the Project area is a participant in the Regional Greenhouse Gas Initiative cap-and-trade emissions reduction program, and each incentivizes energy retailers to derive a certain amount of the energy they sell from biomass. Recent studies, however, have called into question previously held views of biomass as a “carbon-neutral” fuel source. As a result, in 2012, Massachusetts suspended consideration of applications for certain biomass generation units pending a rulemaking.

By state, current net electricity generation from biomass in the Project area is 22 GW in Rhode Island, 62 GW in Connecticut, 99 GW in Massachusetts, and 201 GW in New York State (DOE/EIA, 2014). A recently completed project in Dartmouth, Massachusetts includes a digester to convert food and other organic wastes into about 650 megawatt hours (MWh) per year (Commonwealth of Massachusetts, 2014). In addition, a proposed wood burning facility in Plainfield, Connecticut would convert clean wood waste from construction sites into 37.5 MWh of power per year (Enova Energy Group, 2014).

Biomass fuels used to generate electricity may be able to replace some of the demand in the Project area for new electricity generation, but this would not meet the objectives of the Project. Certain types of biomass fuels, such as landfill or digester waste gas, could potentially replace some of additional natural gas supply that would be provided by the Project. However, there currently is a lack of adequate infrastructure to convert biomass to power and transport the energy to market on a large scale. As a result, additional use of biomass fuels as a substitute for natural gas would require the construction of new facilities, including pipelines, which could result in impacts similar to or greater than those of the Project. For all these reasons, the use of biomass energy would not be practical or provide a significant environmental advantage over the Project.

### **Solar/Photovoltaic**

Solar or photovoltaic power systems convert sunlight directly into electricity. While each of the states in the Project area has implemented policies or incentives to encourage development of solar resources, solar energy represents a small fraction of energy production and consumption in the Northeast region. Net generation from solar sources is 10 GW combined for all of New England and 2 GW for New York State (DOE/EIA, 2014).

Several recent solar energy projects have been proposed or announced in the Project area. HelioSage Energy is planning to construct a 20 MW, alternating current, photovoltaic system on a 145-

acre site in Sprague and Lisbon Counties, Connecticut (HelioSage, 2014; Howard, 2013). Massachusetts Electric Construction Company (MECC) is in the process of constructing several ground-mounted solar arrays ranging in capacity from 1.5 to 5.9 MW at 12 sites in Connecticut and Massachusetts (MECC, 2014). RS Energy is planning to develop solar farms at four sites in Massachusetts with a combined generating capacity of 3.5 MW (AZoCleanTech.com; 2014). The HelioSage Energy and RS Energy projects are still in early development stages and their future is uncertain.

While solar initiatives could potentially bring additional energy to the Project area, solar energy is least available during winter months when demand for natural gas is highest. Additionally, the scale at which customers would choose to install solar panels based on existing or future incentives is unclear. These systems generally are not well suited for use as large-scale generation in the Northeast region due to relatively low direct insolation, lower efficiencies, and higher capital costs. Further, solar power generation on an industrial/commercial scale would require cooperation or agreements with the owners of existing infrastructure to use existing buildings or other structures for mounting the solar arrays, or large areas of land with impervious cover and no shading, which would need to be rededicated to permanent solar collection facilities, to allow for the photovoltaic panels to gather energy. In contrast, the permanent right-of-way of the proposed Project area would be restored to pre-construction contours and maintained as herbaceous cover. Therefore, a large, industrial/commercial scale, solar power generation facility would result in greater visual, vegetation, and habitat impacts than the proposed Project. Impacts of new electric transmission lines associated with solar power generation facilities would be similar to or greater than the impacts from the proposed Project because Algonquin would primarily use its existing right-of-way whereas a new electric transmission line would need to acquire and disturb new land.

Like other renewable energy fuels, solar power may be able to replace some of the demand in the Project area for new electricity generation. However, solar energy would not meet the objectives of the Project. Additionally, construction of commercial-scale solar facilities would require development of large sites and construction of new electric transmission facilities, which could result in impacts similar to or greater than those of the Project. For all these reasons, solar energy would not be practical or provide a significant environmental advantage over the Project.

### **Tidal and Wave**

Wave energy technology is in the early stages of development and not commercially available. Additionally, the high cost of construction and potential for environmental impacts on marine resources may limit development of this resource. In contrast, capture of tidal power is a proven technology, but criteria for suitable site selection limit the areas available for development. Suitable sites require large water flows through a narrow channel into a substantial tidal basin.

The Muskeget Tidal Energy Project in Edgartown, Massachusetts is an example of a recent tidal energy project in southern New England. The Town of Edgartown, in conjunction with nearby towns, universities, and government agencies, is developing a proposal to construct a 5 MW pilot project in the Muskeget Channel. The project would deploy new marine hydrokinetic technologies to produce electricity from incoming and outgoing tides in the channel (New England Marine Renewable Center, 2014).

Like the other renewable fuels, tidal and wave energy may be able to replace some of the demand in the Project area for new electricity generation. However, tidal and wave energy would not meet the objectives of Project. Additionally, it is unlikely that the environmental impacts associated with construction and operation of large-scale hydrokinetic facilities, including any electric transmission lines needed to bring the power to market, would be significantly less than those of the Project. This is due to the potential construction and operational impacts on the marine environment associated with a

permanent, large-scale hydrokinetic generating facility. For all these reasons, tidal and wave energy would not be preferable to or provide a significant environmental advantage over the Project.

### **Summary of Renewable Energies**

While the renewable energy projects that have been and will be proposed in the Project area will help diversify the electricity market and decrease the need for traditional fossil fuel energy sources, there still would be issues associated with the siting and development of renewable energy facilities. Other issues would include high costs and the time required to develop new energy infrastructure, including electricity generation and transmission facilities. Construction of new facilities would result in impacts on air, water, wildlife, and other resources, which could be similar to or greater than those for natural gas pipelines.

We also note that renewable energy is not 100 percent interchangeable with natural gas. Most renewable energy sources are used to generate electricity. While natural gas is used to generate electricity, it is also used for heating and cooking. These uses could be served by electricity instead of natural gas, but existing natural gas-based heating and cooking systems in the Project area would need to be converted to electric-based systems, which could be prohibitively expensive for many consumers. In contrast, the Project would provide additional natural gas supplies for direct residential and commercial uses, including heating and cooking. Therefore, renewable energy alternatives were eliminated from further consideration.

#### **3.2.2.1 Nuclear Energy**

Another traditional, non-renewable fuel source alternative to natural gas for electricity generation is nuclear power. There currently are four active nuclear power plants in New England and four in New York State, though one of these facilities, Vermont Yankee in Vernon, Vermont, is scheduled to close in 2014. By state, current net generation from nuclear facilities in the Project area are 0 GWh in Rhode Island, 1,565 GWh in Connecticut, 441 GWh in Massachusetts, and 3,765 GWh in New York State (DOE/EIA, 2014). No substantive increase in the use of nuclear power in New England or the Mid-Atlantic region is expected to occur between 2012 and 2040 based on projections by the DOE/EIA (2013).

Because the subject of nuclear power remains controversial, any future proposals to construct new or expand existing facilities in the region would likely involve prolonged regulatory review and public opposition. Furthermore, there is a regulatory process addressing safety and environmental issues (including reviews in the areas of nuclear safety and security, the disposal of spent nuclear fuel, and alterations to hydrological and biological systems) that would have to be completed before any new plants could be constructed and operated. Even if this regulatory review process was completed, a new plant would not likely be operational for many years. For these reasons, new sources of nuclear power could not meet the schedule of the Project and are not currently a practicable alternative to the proposed Project.

#### **3.2.2.2 Fossil Fuels**

Coal potentially could be used to provide additional electrical generation in the Project area, but this would not meet the objectives of or provide the same benefits as the Project. We also note that life-cycle greenhouse gas emissions for coal-fired electricity generation range from 36 to 47 percent higher than for natural gas-fired electricity (ICF International, 2012).

Additional use of oil by existing facilities, development of new oil-fired generating plants, or conversion of natural gas home heating systems to oil burning furnaces could provide additional electricity and heat during peak winter demand periods. However, an increase in the use of petroleum



and oil-fired energy or heat sources would produce greater quantities of sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), GHGs, and airborne mercury than natural gas heating units and boilers (EPA, 1995). This would reduce regional air quality and would be in conflict with the state energy plans and the Policy Statement of the New England Governors, each of which identify natural gas as a key component of sustainable energy.

For all the reasons stated above, the use of other fossil fuels would not be practical or provide a significant environmental advantage over the Project.

### **3.3 SYSTEM ALTERNATIVES**

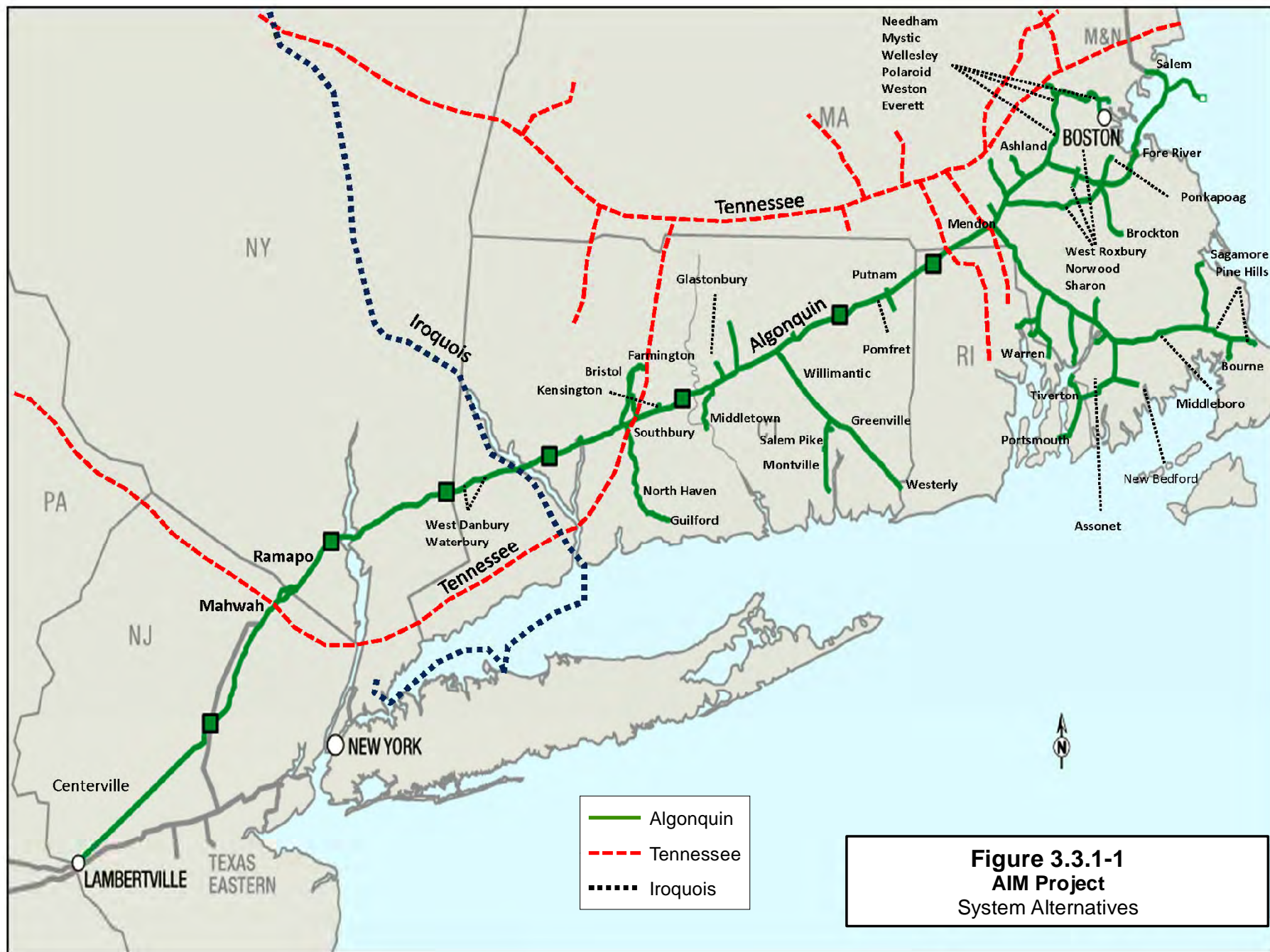
System alternatives would utilize existing, modified, or proposed natural gas pipeline systems to meet the objectives of the Project. Implementation of a system alternative would make it unnecessary to construct all or part of the Project, although modifications or additions to existing or proposed systems could be required. These modifications or additions would result in environmental impacts that could be less than, similar to, or greater than those associated with construction and operation of the Project. The purpose of identifying and evaluating system alternatives is to determine whether the environmental impacts associated with construction and operation of the Project could be avoided or reduced by using another pipeline system, while still meeting the objectives of the proposed action.

A viable system alternative to the Project would have to provide the pipeline capacity necessary to transport an additional 342,000 Dth/d of natural gas at the contracted volumes and to the delivery points required by the precedent agreements signed by Algonquin and the Project Shippers. A viable system alternative additionally would need to eliminate capacity constraints on existing pipeline systems in New York State and southern New England, and provide access to the growing supply areas in the Northeast region. A viable system alternative would need to provide these services within a timeframe reasonably similar to the Project.

Our analysis of system alternatives includes an examination of existing and proposed natural gas transportation systems that currently or eventually would serve the markets targeted by the Project, and considers whether those systems would meet the Project's objectives while providing an environmental advantage over the proposed action. A brief assessment of each of the existing and proposed systems is provided in the subsections below.

#### **3.3.1 Status of Existing Systems**

In addition to the existing Algonquin system, two other existing interstate pipelines provide natural gas transmission service into southern New England: Tennessee Gas Pipeline (Tennessee) and Iroquois Gas Transmission (Iroquois) (see figure 3.3.1-1). Like the Algonquin system, each of these pipelines currently are at or near capacity. Consequently, use of either of these systems would require modifications, including the construction of new pipelines, to transport the volume of gas to the delivery points required by the Project Shippers. Figure 3.3.1-1 depicts the location of the Tennessee and Iroquois systems relative to Algonquin's existing system in southern New England.



**Figure 3.3.1-1**  
**AIM Project**  
 System Alternatives

The existing Tennessee pipeline reaches western Connecticut, northern Rhode Island, and central Massachusetts. As currently configured, the system cannot service eastern Connecticut, southern Massachusetts, or southern Rhode Island. The existing Iroquois pipeline services southwestern Connecticut and Long Island, New York, but does not reach eastern Connecticut, Rhode Island, or Massachusetts. As a result, significant expansion of the Tennessee or Iroquois systems would be necessary to provide service to the delivery points required by the Project Shippers. Expansion of these systems would require construction of hundreds of miles of new pipeline, much of which would duplicate the existing Algonquin system, to reach the delivery points required by the Project Shippers. This would result in much greater environmental impact than the Project, which would use a combination of pipeline replacements, loops, and a lateral, as well as additional compression, to deliver the additional volume of natural gas required by the Project Shippers. Therefore, expansion of the Tennessee or Iroquois systems would not be a reasonable alternative to or provide an environmental advantage over the Project.

### **3.3.2 Proposed Systems**

We identified two planned projects in southern New England which, if modified, could provide additional volumes of natural gas to the Project Shippers in southern New England. These are Tennessee's Connecticut Expansion Project in New York, Massachusetts, and Connecticut, and Tennessee's Northeast Energy Direct Project in New York and Massachusetts.

#### **Connecticut Expansion Project**

As currently planned, the Connecticut Expansion Project would provide about 72,000 Dth/d of additional transportation capacity on the existing Tennessee system for delivery to customers in Connecticut. The project would require the construction of about 13 miles of pipeline loops at various points along Tennessee's existing Line 200 pipeline in New York, Massachusetts, and Connecticut (Dubay, 2013; Santa Maria, 2013; Hamilton, 2014). To meet the objectives of the Project, the Connecticut Expansion Project would need to be expanded to provide additional capacity and reach the delivery points required by the Project Shippers. This would require the construction of hundreds of miles of additional pipeline, much of which would duplicate the existing Algonquin system. The additional pipeline construction would result in much greater environmental impact than the proposed modifications to the Algonquin system. Therefore, the Connecticut Expansion Project would not be preferable to or provide a significant environmental advantage over the Project.

#### **Northeast Energy Direct Project**

The Northeast Energy Direct Project, as currently envisioned, would provide up to 2.2 billion cubic feet per day of natural gas to southern New England. The project would require the construction of about 344 miles of pipeline in Pennsylvania, New York, Connecticut, New Hampshire, and Massachusetts (Tennessee, 2014). To meet the objectives of the Project, the Northeast Energy Direct Project would need to be modified to reach the delivery points required by the AIM Project Shippers. This would require the construction of hundreds of miles of additional pipeline, much of which would duplicate the existing Algonquin system. The additional pipeline construction would result in greater environmental impact than the Project. Moreover, if the project is proposed before the Commission in the future and subsequently approved and constructed, the Northeast Energy Direct Project would be in-service no sooner than November 2018, so it would not meet the objectives of the Project within a reasonable timeframe. For all these reasons, the Northeast Energy Direct Project would not be preferable to or provide a significant environmental advantage over the Project.

### 3.4 FACILITY DESIGN AND SITING ALTERNATIVES

Algonquin states that its existing mainline system does not have adequate unsubscribed capacity to accommodate the additional volume of natural gas required by the Project Shippers. Algonquin's system has a capacity of 2.6 billion cubic feet per day (bcf/d) along its 1,127-mile length between Lambertville, New Jersey and the Boston area in Massachusetts. The new and modified facilities would create an additional 342,000 Dth/d of natural gas transportation capacity on Algonquin's system for delivery to the Project Shippers at various points in southern New England (see figure 3.4-1).

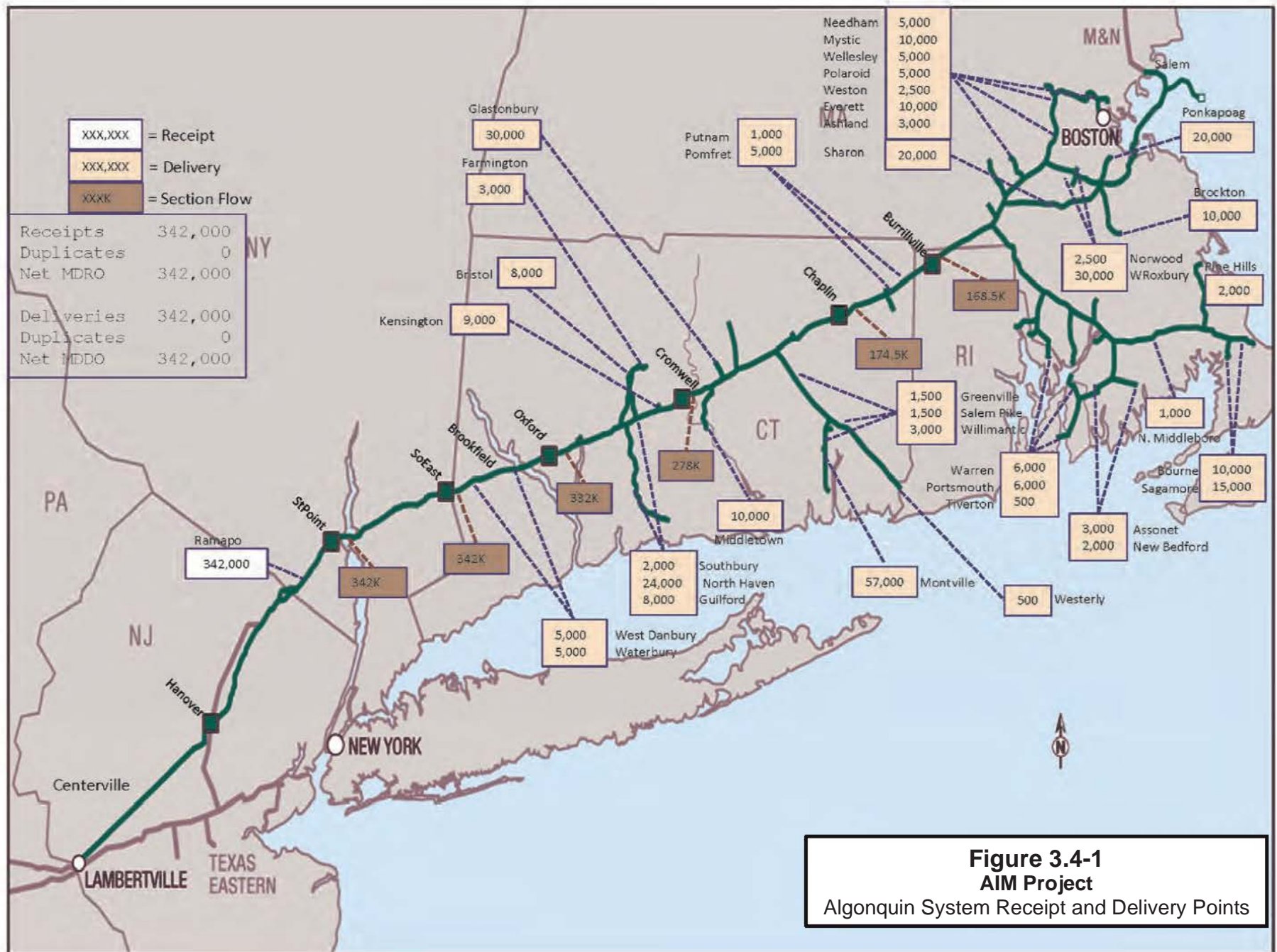
We received several comments from stakeholders regarding facility design and siting for the proposed replacement, loop, and lateral pipelines and other facilities for the Project. Algonquin's design for the proposed facilities is based on the flow dynamics and pressure of natural gas as it moves through the pipeline system. Natural gas is pressurized at compressor stations to create flow within the mainline and lateral pipelines within the system. As the gas exits a compressor station and moves along a pipeline, the pressure of the gas decreases due to turbulence and friction. The pressure continues to drop until the gas is re-compressed at the next compressor station along the system. In general, the pressure of gas in a pipeline must be equal to or greater than 450 psig where it enters a compressor station to ensure efficient operation of the system; the pressure is greater, up to the MAOP of the pipeline, where the gas leaves the compressor station.

Algonquin states that it designed and sited the proposed Project facilities to increase capacity and maintain the required pressure profiles along each pipeline segment between the existing compressor stations along the system. We independently verified Algonquin's mainline system expansion and the flow dynamics of its existing system. In some of the segments on Algonquin's mainline pipelines, the additional volume of natural gas required by the Project Shippers would be provided by increased compression without the need for a larger diameter pipeline or a new pipeline loop. For example, this is the case of the mainline segments at points downstream of the Chaplain Compressor Station in Windham County, Connecticut and the Burrillville Compressor Station in Providence County, Rhode Island. In these pipeline segments, the existing flow rates and pressures in the mainline pipelines are lower than at upstream segments due to customer deliveries of natural gas out of the system. As a result, these segments can accommodate additional volumes of natural gas with increased compression alone.

In other segments along the system, there is little or no capacity to transport additional volumes of natural gas because of higher flow rates and pressures within the pipelines. In these areas, a combination of new pipeline construction and increased compression would be necessary to create additional capacity to transport the volume of natural gas required by the Project Shippers. This is the case, for example, of the mainline segment between the existing Stony Point Compressor Station in Rockland County, New York and the existing Southeast Compressor Station in Putnam County, New York (i.e., the Stony Point to Yorktown Take-up and Relay segment). For this segment, Algonquin proposes to increase compression at the Stony Point Compressor Station and replace about 12.3 miles of 26-inch-diameter pipeline downstream of the compressor station with a new, 42-inch-diameter pipeline. The larger diameter pipeline is necessary to increase capacity and maintain the required pressure profile of the pipeline segment downstream of the Stony Point Compressor Station until the gas in the pipeline can be re-compressed at the Southeast Compressor Station.

Because the locations of the proposed pipeline replacements and loops are based on flow dynamics within the system, alternative locations or configurations would not be practical. Shifting the proposed facilities upstream or downstream of their current proposed locations would fail to create the additional capacity or pressure profiles within each pipeline segment to provide capacity for the additional volumes of natural gas and operate the system efficiently.





As an example, Algonquin is proposing to replace about 4.5 miles of 26-inch-diameter pipeline with a new, 42-inch-diameter pipeline in Putnam County, New York and Fairfield County, Connecticut downstream of the existing Southeast Compressor Station (i.e., the Southeast to MLV 19 Take-up and Relay segment). The pipeline replacement would create the additional capacity and flow characteristics necessary to operate the Project downstream of the Southeast Compressor Station. Shifting the pipeline replacement segment upstream of the compressor station would increase capacity on that segment, but create a bottleneck for delivery in areas downstream of the compressor station. This is because Algonquin would be unable to deliver additional volumes of natural gas downstream of the Southeast Compressor Station without a larger diameter pipe.

Additional information on facility design and siting is provided by Project component in the subsections below. The location of each facility component is described in section 2.1 and depicted on figure 2.1-1.

### **3.4.1 Take-up and Relay**

At three locations (i.e., the Haverstraw to Stony Point, Stony Point to Yorktown, and Southeast to MLV 19 Take-up and Relay segments), Algonquin proposes to replace the existing 26-inch-diameter mainline with a new 42-inch-diameter pipeline. In conjunction with increased compression, the larger diameter pipeline in these segments would increase the carrying capacity of the mainline system, allowing Algonquin to meet its contractual obligations to existing customers and also provide the additional volumes of natural gas required by the Project Shippers. In each of these locations, replacement of the existing pipeline would maximize the use of existing right-of-way, which would minimize impacts on the environment during construction. While new pipeline loops in these same areas could similarly create additional capacity on the system, these are not considered feasible alternatives due to urbanization in the vicinity of the mainline and encroachment on the existing right-of-way. Relative to pipeline replacements, pipeline loops would require a wider construction corridor in areas where available space is limited and existing land uses preclude expanding the width of the existing right-of-way.

In another location (i.e., the E-1 System Lateral Take-up and Relay segment), the existing 6-inch-diameter pipeline cannot support the proposed incremental capacity of the Project. A larger, 16-inch-diameter pipeline is necessary to increase capacity to facilitate the transportation of additional natural gas volumes to an existing delivery point on the system. As with the other take-up and relay segments, replacement of the existing pipeline would maximize use of the existing right-of-way and minimize impacts on the environment during construction.

### **3.4.2 Loop Extension**

At two locations (i.e., the Line-36A Loop Extension and E-1 System Lateral Loop), Algonquin proposes to extend existing pipeline loops to increase the transmission capacity of the system. In each of these areas, Algonquin's engineers have determined that extension of existing pipeline loops would be preferable to pipeline replacements to create the required pressure profiles to operate the system efficiently. There is less urbanization along the existing pipeline right-of-way in these areas to preclude expansion of the existing right-of-way width. Additionally, extending the existing loops would minimize the duration of outages on Algonquin's system during construction, which would minimize service disruptions to downstream customers. For each of the pipeline loops, outages would be limited to a short period of several hours during tie-in operations. In contrast, outages of several weeks would be required to remove and replace the existing pipelines in these areas.

### 3.4.3 New Pipeline

We received a number of comments on the draft EIS asking how the West Roxbury Lateral and delivery point were selected and why the deliveries to Boston Gas cannot be served by another part of Algonquin's system. According to Algonquin, Boston Gas has requested a new delivery point in the West Roxbury section of the City of Boston to enhance and reinforce the existing Boston Gas delivery system, reliability during outage situations, and support long-term growth in the area. The proposed delivery point would be located at an interconnection with the Boston Gas delivery system in an area where additional supplies of natural gas are needed. The site for the new delivery point cannot be reached by the existing Algonquin pipeline system. As a result, Algonquin proposes to construct about 4.9 miles of new pipeline lateral (West Roxbury Lateral) and a new M&R facility to provide Boston Gas with the service it has requested.

Currently, about 25 percent of peak day supplies are delivered to Boston Gas on the Algonquin J-System Lateral and about 15 percent of the peak requirements for Boston Gas are supplied from the Commercial Point LNG Peak Shaving Facility. Algonquin's J-System Lateral primarily supplies the City of Boston through six existing meter stations. The J-System Lateral is also connected to the Commercial Point LNG Facility. In the past, the Commercial Point peak shaving facility would deliver gas into the J-System Lateral for redelivery to customers served by Algonquin. These volumes provided an operational benefit to Algonquin's customers (Boston Gas and Colonial Gas) by supporting pipeline pressures on the east end of the system. However, deliveries from Commercial Point into the J-System Lateral have decreased dramatically over the last few years such that, if there were of an outage on the J-System Lateral on a cold day (i.e., 15 degrees), Algonquin anticipates widespread system outages would occur, affecting thousands of customers.

Given that the West Roxbury Lateral would be supplied from Algonquin's I-System Lateral, Boston Gas customers' exposure to the reliability risk described above would be greatly reduced. In the event of an outage on the J-System Lateral, the anticipated number of outages would be reduced by about two-thirds.

In addition to the reliability and reinforcement benefits to existing gas customers, construction of the West Roxbury Lateral would also support anticipated long-term growth in the Boston region. Historically, West Roxbury has been one of the low pressure points on the Boston Gas intermediate pressure system. By connecting a new supply point to this portion of the Boston Gas system, the West Roxbury Lateral would help enable growth in the Boston area and minimize the need for on-system distribution projects.

The West Roxbury Lateral would deliver gas into a constrained area of the Boston Gas intermediate pressure system, which is also the location where the Boston Gas intermediate pressure system comes closest to Algonquin's I-System Lateral. It may be possible to begin the West Roxbury Lateral at a different location along Algonquin's existing I-System Lateral but this would increase the length and therefore the impact of the new lateral. Additionally, we have not identified an alternate starting point for the West Roxbury Lateral that would be preferable to the proposed route.

The proposed West Roxbury M&R Station is located at a point on the intermediate pressure system that is capable of receiving sufficient volumes of gas to provide the benefits noted above. Without the new lateral, many of these new potential customers could not be served without the need for significant system reinforcement. According to Algonquin, it has reviewed gas capacity requests for loads totaling 72.9 million metric British thermal units (MMBtu) (about 27 percent of the current total

system load); of which 37 percent could not be served without construction of significant system facilities.

Another identified advantage of the proposed new delivery point is that it would facilitate ongoing planned maintenance activities by Boston Gas, such as pipeline inspections and the replacement of sections of transmission main, without the risk of customer outages or the need to supplement supplies with portable LNG operations.

Information on specific route and site alternatives for the proposed lateral and M&R station are provided in sections 3.5 and 3.6 below.

#### **3.4.4 Compressor Station Modifications**

In addition to the pipeline facilities described above, the Project would require additional compression to transport the additional volume of natural gas required by the Project Shippers. To provide the additional compression, Algonquin proposes to install two new gas-fired compressor units at the existing Stony Point Compressor Station, install one new gas-fired compressor unit at each of the existing Southeast, Cromwell, Chaplin, and Burrillville Compressor Stations, and restage one existing compressor unit at the existing Oxford Compressor Station. No new compressor stations are proposed for the Project. In conjunction with the new pipeline facilities, the additional compression provided by the new/restaged compressor units would increase the maximum design capacity of Algonquin's mainline system from about 2.6 to 2.9 bcf/d.

One of the new units to be installed at the Stony Point Compressor Station would replace four existing reciprocating units on Algonquin's existing 26-inch-diameter mainline. The new unit would be rated to replace the capacity of the existing reciprocating units while also providing the additional horsepower needed to operate the Project. The Mars 100 is the preferred unit model for the replacement because it would meet the horsepower requirements of the mainline system as well as the air emissions thresholds required in the existing air permits for the Stony Point Compressor Station. Other potential models, such as the Mars 90 or Taurus 70, were dismissed because they would not provide the required horsepower to operate the system and/or do not provide sufficient air emission reductions.

#### **3.4.5 Conclusions Regarding Facility Design and Siting**

We evaluated information filed by Algonquin and conducted our own engineering analysis to assess the facility design and locations proposed by Algonquin for the Project. We conclude that Algonquin designed the Project to maximize the efficient transportation of additional natural gas supplies through its mainline system. Additionally, the new and modified facilities would maximize the use of existing pipeline rights-of-way and aboveground facility sites, which would minimize environmental impacts during construction.

Alternative facility designs or locations potentially could increase capacity on certain segments of the system, but would result in operational inefficiencies that would inhibit the delivery of additional natural gas supplies to the Project Shippers. Moving the locations of pipeline replacement segments, for example, would fail to create additional transportation capacity at locations where it is needed to transport additional volumes of natural gas on the system. Moreover, we note that alternative designs or locations would not avoid environmental impacts, but shift them from one location to another. Therefore, for all the reasons discussed above, the alternative designs or locations considered would not be practicable or provide an environmental advantage over the Project.



### 3.4.6 Compressor Units

At the request of FERC staff, Algonquin evaluated the feasibility of installing electric-driven compressor units in lieu of gas-fired units at each of the compressor station sites. Algonquin states that it considered several factors in evaluating the type of unit to install at each site, including: proximity to existing electric power sources; the need for new or modified electric power sources or transmission facilities; the need for additional ancillary facilities, such as substations; the ability of power companies to design, permit, and construct new facilities in a timeframe reasonably close to the Project; additional environmental impacts associated with construction of new facilities; and the ability to comply with emissions standards during operations at each site.

Algonquin consulted with regional power providers in the vicinity of each compressor station to determine the need for new electric distribution facilities to provide power for electric-driven compressor units at each of the compressor station sites. Based on these consultations, between 1.5 and 8.0 miles of new electric distribution line would need to be constructed to each compressor station site to provide a primary, dedicated power source for new electric-driven compressor units. Additionally, upgrades to existing electric substations would be required at three locations, and new substations would need to be built at each existing compressor station site. It is estimated that a minimum of 2 years would be required to design, permit, and construct these new facilities.

As shown in table 3.4.6-1, construction of the new electric distribution facilities and substations would collectively affect a total of about 58.0 acres of residential, rural, and commercial lands. This would result in visual impacts on existing homes as well as impacts on wetlands, waterbodies, trees, and habitat for state-listed sensitive species. The new electric distribution line to the Chaplin Compressor Station would additionally cross the Mansfield Hollow State Park in Mansfield, Connecticut.

Another issue with the installation of electric-driven compressor units in lieu of gas-fired units is availability of backup power to each site (i.e., access to a secondary substation in the event of an outage at the primary substation). No backup power would be available to the Stony Point, Southeast, and Burrillville Compressor Stations. Backup power would be available to the Cromwell and Chaplin Compressor Stations, but would require the construction of an additional 16 miles and 10.7 miles, respectively, of new electric distribution lines. Construction of these lines would result in additional impacts on residential and rural areas as well as environmental resources.

We evaluated Algonquin's proposal to install gas-fired compressor units rather than electric-driven units at the existing compressor station sites along the mainline. The use of electric-driven compressor units would result in additional environmental impacts during construction due to installation of non-jurisdictional facilities such as electric transmission lines and substations. Also, installation of electric-driven compressors would limit the Algonquin's ability to satisfy the Project's schedule due to the time needed to permit, design, and construct these non-jurisdictional facilities. While electric-driven units would result in lower operating emissions, this advantage would be offset by the other impacts described above. In consideration of all these factors, we conclude that use of electric-driven compressor units would not be preferable to or provide a significant environmental advantage over the proposed Project.

TABLE 3.4.6-1				
Additional Power Facilities Required to Install Electric-Driven Compressor Units at Compressor Station Sites for the AIM Project				
New Electric Transmission Facilities	Additional Area Affected by Construction	Land Uses	Minimum Time to Permit, Design, and Construct	Potential Issues
<b>Stony Point Compressor Station – Rockland County, New York</b>				
2.0 miles of buried 138 kilovolt (kV) distribution cable in or along streets; upgrades to an existing substation; construction of a new substation	14 acres	Residential – 87 percent Commercial – 13 percent	2 years	Would require installation within the existing right-of-way for New York State Highway 210; if this is not feasible, the transmission cable would be longer; no backup power available
<b>Southeast Compressor Station – Putnam County, New York</b>				
2.0 miles of aboveground 46 kV distribution line in or along highways and roads; upgrades to an existing substation; construction of a new substation	4 acres	Residential – 21 percent Rural – 79 percent	2 years	Visual impacts in residential and rural areas associated with the installation of new power poles; no backup power available
<b>Cromwell Compressor Station – Middlesex County, Connecticut</b>				
1.5 miles of aboveground 23 kV distribution line, including 1 mile of greenfield corridor; construction of a new substation	11 acres	Rural – 100 percent	2 years	Up to 6 acres of tree clearing and visual impacts due to the installation of new power poles; the route would cross 4 wetlands and 1 stream; the route would affect habitat for state-listed species; a second distribution line measuring 16 miles in length would be needed for backup power
<b>Chaplin Compressor Station – Windham County, Connecticut</b>				
6.0 miles of aboveground 13.8 kV distribution line, mostly in or along existing roads or rights-of-way; construction of a new substation	17 acres	Residential – 57 percent Rural – 43 percent	2 years	Visual impacts in residential and rural areas; the route would cross Mansfield Hollow State Park; the route would cross 12 streams and 2 wetlands; the route would affect habitat for state-listed species; a second distribution line measuring up to 10.7 miles in length would be needed for backup power
<b>Burrillville Compressor Station – Providence County, Rhode Island</b>				
8.0 miles of aboveground 34 kV distribution line in or along roads; upgrades to an existing substation; construction of a new substation	12 acres	Residential – 82 percent Rural – 18 percent	2 years	Visual impacts in residential and rural areas due to installation of new power poles; the route would cross 9 streams and 9 wetlands; no backup power available

### **3.4.7 Waste Heat Generation**

A recent paper by the Interstate Natural Gas Association of America (2008) considers the potential for energy efficiency at natural gas compression facilities via recovery of waste heat. The paper identifies threshold criteria for determining whether waste heat cogeneration is feasible at these facilities. The criteria include a total of 15,000 hp of compression provided by gas turbine units operating for at least 5,250 hours per year with a 60 percent load factor.

The potential to install waste heat cogeneration facilities was evaluated at Algonquin's compressor stations that would meet the horsepower and load factor thresholds identified in the Interstate Natural Gas Association of America paper. Because there are no existing facilities in the vicinity of the compressor stations to utilize waste heat, such as heat recovery steam generators or steam turbines, it was determined that waste heat recovery is not currently a viable option for the compressor stations.

## **3.5 ROUTE ALTERNATIVES AND VARIATIONS**

### **3.5.1 Route Alternatives and Variations Evaluated Prior to Issuance of the Draft EIS**

We evaluated a route alternative at the Hudson River crossing of the Stony Point to Yorktown Take-up and Relay segment to address geological and constructability issues along Algonquin's existing mainline. We evaluated two route alternatives along the proposed West Roxbury Lateral to address impacts on existing land uses, primarily residential and commercial areas. We additionally evaluated a number of minor route variations along different components of the Project to resolve or address localized resource issues or stakeholder concerns. Each of the route alternatives and the minor route variations are discussed in the subsections below.

#### **3.5.1.1 Hudson River Northern Route Alternative**

Algonquin's mainline system includes two existing 24-inch-diameter pipelines and one existing 30-inch-diameter pipeline across the Hudson River between the Town of Stony Point, Rockland County, New York, and the Village of Buchanan in the Town of Cortlandt, Westchester County, New York. As part of the Project, Algonquin proposes to install a new 42-inch-diameter pipeline across the river in conjunction with the Stony Point to Yorktown Take-up and Relay segment. The proposed river crossing would be located about 0.5 mile south of Algonquin's existing mainline right-of-way. The three existing pipelines and the proposed pipeline would provide transportation service across the river.

We received a comment from the NYSDEC questioning the need for an additional 42-inch-diameter pipeline across the Hudson River when the three existing pipelines would continue to remain in service. Based on information filed by Algonquin, the three existing pipelines across the river do not have sufficient available capacity to accommodate the additional volume of natural gas required by the Project Shippers. The two existing 24-inch-diameter pipelines each have an MAOP of 674 psig, and the 30-inch-diameter pipeline has an MAOP of 750 psig. None of the three existing pipelines can be upgraded to a higher MAOP to accommodate additional volumes of natural gas. Therefore, either a new pipeline or the replacement of one of the existing pipelines with a new, higher capacity pipeline would be necessary to carry the additional volumes of natural gas. The removal of an existing pipeline and replacement of it with a new pipeline using the HDD method would result in greater impact than the installation of a new pipeline by HDD while leaving the existing pipelines in place.

Algonquin additionally states that it would maintain service on the three existing pipelines across the river to enhance system reliability. In the event of an outage on the existing 30-inch-diameter pipeline or the proposed 42-inch-diameter pipeline across the river (e.g., due to upstream maintenance activities),

the two existing 24-inch-diameter pipelines could continue to provide service (at lower operating pressures) to minimize the interruption of service or reduction of flows to downstream points on the system. Without the two existing 24-inch-diameter pipelines across the river, an outage of either the existing 30-inch-diameter pipeline or proposed 42-inch-diameter pipeline could result in significant natural gas losses in the system, which would impact power producers and industrial, commercial, and residential consumers in southern New England.

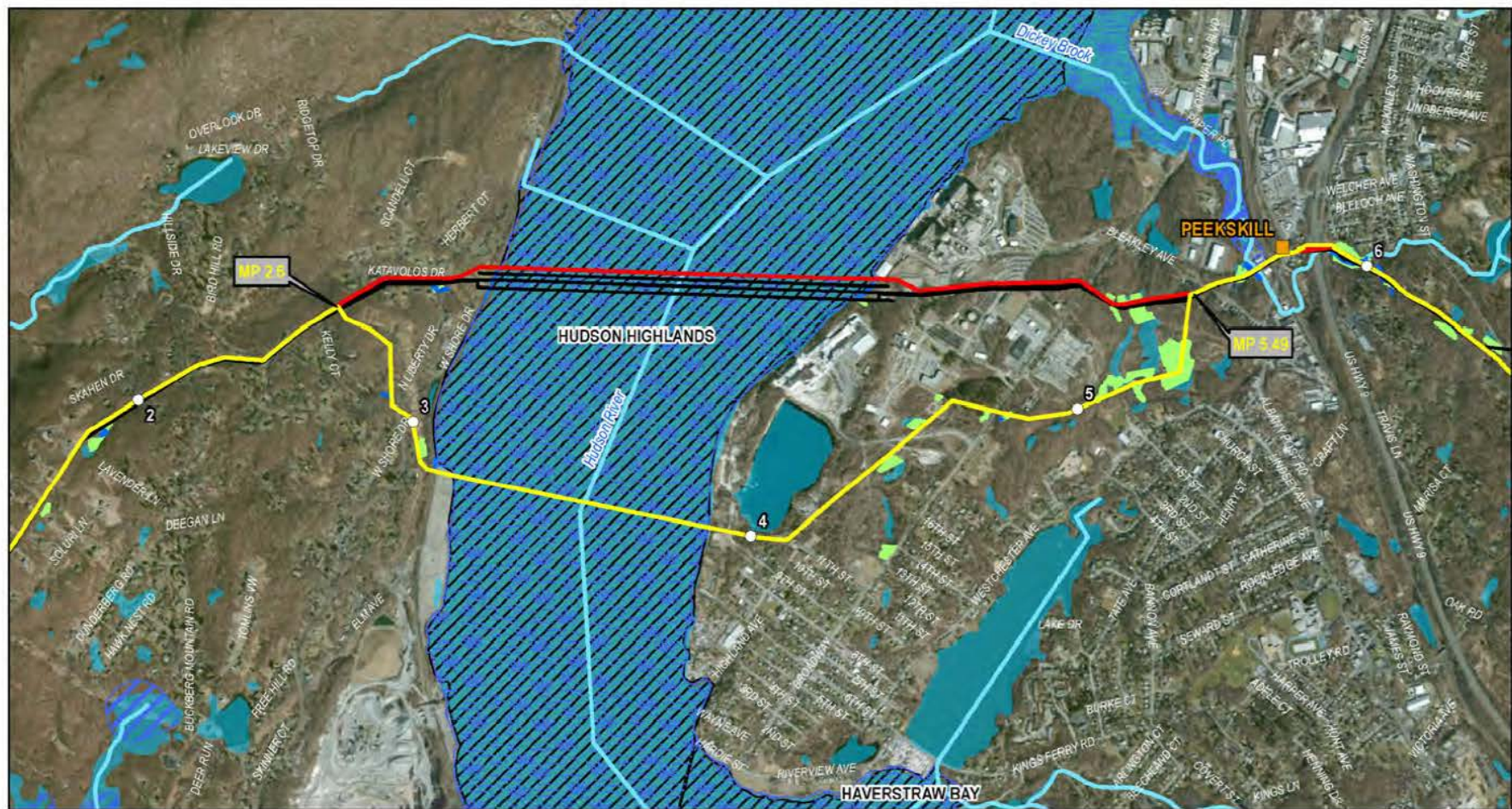
We evaluated two potential crossings of the Hudson River: the proposed route, which deviates from the existing Algonquin right-of-way, and an alternative route that follows the existing right-of-way (Hudson River Northern Route Alternative). As shown in figure 3.5.1-1, each route originates at MP 2.6 and terminates at MP 5.5 of the Stony Point to Yorktown Take-up and Relay. From the starting point, the proposed route initially heads south/southeast for about 0.5 mile away from the existing mainline right-of-way. It then heads east/southeast for about 1.0 mile crossing from the west to the east bank of the river. It then heads northeast for about 1.3 miles, terminating at the existing mainline right-of-way. The Hudson River Northern Route Alternative is parallel to and on the north side of the existing mainline right-of-way across the river. Both routes cross portions of the existing Indian Point Energy Center (IPEC) nuclear facility on the east bank of the river in Westchester County, New York. We assumed use of an HDD construction method for the river crossing along either the proposed or alternative routes to avoid in-water impacts within the Hudson River.<sup>2</sup>

Table 3.5.1-1 compares engineering and select environmental data for each route. The Hudson River Northern Route Alternative is about 0.6 mile shorter and would cross less wetland than the proposed route. The alternative route, however, would pass near more houses than the proposed route, though the total number of houses potentially affected by either route would be small.

TABLE 3.5.1-1 Comparison of the Hudson River Northern Route Alternative to the Corresponding Segment of the Proposed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Proposed Route	Alternative Route
Length (mileposts 2.6 to 5.5)	miles	2.9	2.3
Length adjacent to the existing right-of-way	miles	0.0	2.3
Length of the horizontal directional drill	feet	3,800	6,550
Number of residences within 50 feet <sup>a</sup>	number	2	3
Number of residences within 100 feet <sup>a</sup>	number	3	7
Wetland crossings	linear feet	842	376
Wetland impacts	acres	1.9	0.7
Waterbody crossings	number	2	2
<sup>a</sup> Includes residential housing complexes. Each contiguous building was counted as a single residence.			

<sup>2</sup> The existing 24-inch-diameter pipelines and 30-inch-diameter pipeline across the river were installed in the late 1950s and early 1960s using the open-cut construction method.





- Legend**
- Approximate Milepost
  - Existing Meter Station
  - Proposed Meter Station
  - AIM Pipeline Facility
  - Hudson River Northern Route Alternative
  - Existing Algonquin Natural Gas Pipelines
  - Field Surveyed Stream Centerline
  - Field Surveyed Stream Edge
  - Field Surveyed Wetland Polygon

- NHD Stream/River
- Upper Hudson Tidal Wetlands
- Significant Coastal Fish and Wildlife Habitat
- NYDEC Wetlands
- NWI Wetlands



Sources: BING, ESRI, SPECTRA,  
NY GIS, NYS DEC, NHD, NWI, USGS  
Projection: NAD83, UTM Zone 18N  
US Survey Feet, Grid North

**Figure 3.5.1-1**  
**AIM Project**  
Hudson River Northern  
Route Alternative

The proposed route would also cross close to St Patrick's Church and the Buchanan-Verplanck Elementary School. Algonquin has agreed to additional design and installation enhancements for construction and operation near the IPEC facility, which it would also apply to the portion of the proposed pipeline near the school. A discussion of impacts on St. Patrick's Church and Buchanan-Verplanck Elementary School is provided in section 4.8.5.

A major difference between the two routes would be the length of the HDD crossing. Due to differences in the width of the river at each crossing, the HDD for the alternative route would be 2,750 feet longer than the proposed route. The differences in the length of the HDD would be compounded by bedrock conditions along the alternative route, which are unfavorable to a successful HDD crossing, and by land use conflicts within the IPEC nuclear facility, which would provide limited workspace for the HDD on the east side of the crossing.

The depth of the hard bedrock at the river crossing on the alternative route is a significant issue. Based on publicly available geotechnical information, the bedrock profile near the middle of the Hudson River in the area of the HDD drill path is up to 300 feet below river bottom. A shallower drill profile in these conditions would require passing into and out of bedrock in several places and into the glacial till, sand, and clay deposits. This would increase the risk of inadvertent returns of drilling fluid or complications during construction, potentially including failure of the drill. A deeper drill profile entirely within bedrock would require extreme pull loads during pullback, resulting in the risk of structural failure of the pipeline.

The difficulties of an HDD crossing of the Hudson River on the alternative route would be compounded by the length of the HDD, which would be about 6,550 feet long. A successful HDD of this length and in these geological conditions would be technically challenging and unprecedented. We are not aware of any previous HDDs of the same diameter and length that have been attempted in similar bedrock conditions in North America. Additionally, the time required to complete a drill at this crossing would exceed 12 months.

The existing geological conditions along the proposed route are more favorable for a successful HDD crossing of the Hudson River. As discussed in detail in sections 4.1.7 and 4.3.2.3, geotechnical studies conducted by Algonquin indicate that an HDD along the proposed route could be completed within soft clay by passing over the bedrock and glacial till deposits beneath the river. Moreover, the shorter length of the HDD along the proposed route (3,800 feet) is less technically challenging for a 42-inch-diameter pipe, and would reduce the time required to complete the HDD across the river (relative to the alternative route) by 9 to 10 months. We also note that several previous HDD crossings at this length and in these conditions have been completed in North America, including a recent crossing of the Hudson River. Spectra Energy completed an HDD of the Hudson River between Jersey City, New Jersey and lower Manhattan as part of the New Jersey-New York Expansion Project in geological conditions similar to those along the proposed route.

In addition to complications resulting from the drill profile, hard bedrock at the surface on the west of side of the Hudson River crossing along the alternative route would make it difficult to install a steel casing at the drill entry site, which is necessary to maintain and control drilling fluid during the HDD operation. The softer surface sediments on the west side of the river crossing along the proposed route would make it easier to install a steel casing at this location. This, along with the shorter time required to complete the HDD along the proposed route, would help reduce the potential for inadvertent returns of drilling fluid during construction.

Another disadvantage of the Hudson River Northern Route Alternative is the limited amount of space available for pullback operations within the IPEC facility on the east side of the crossing.<sup>3</sup> Algonquin would be limited to about 500 feet of workspace to assemble the pipe string for the HDD. As a result, Algonquin would need to assemble the pipe string (i.e., position, weld, x-ray, and coat individual pipe joints) in 13 sections. This would increase the risk of the pipeline becoming stuck in the drill hole during the pullback operation because the pipeline would be idle as each section of the pipe string is assembled. Algonquin estimates that pullback operations for the Hudson River Northern Route Alternative crossing would require one week or more to complete. Two existing access roads within a security zone at the IPEC facility would need to be closed for this entire period.

In contrast, there is more available workspace for pullback operations on the east side of the Hudson River along the proposed route. As a result, only three pipe string sections would be required, which would reduce the time needed to complete pullback operations and the risk of the pipeline becoming stuck in the drill hole. Additionally, although the workspace for the pullback operation would be within the IPEC facility, it would be outside the security zone and would not require the closure of any exiting access roads.

Another issue and difference between the proposed route and the alternative pertains to the potential for operational conflicts with the IPEC facility. We received a comment from the New York State Attorney General's Office noting the proximity of Algonquin's existing pipelines to a potential location for a closed-cycle cooling system for Indian Point Unit 3, and citing concerns that a new pipeline in this area, immediately south of the IPEC security zone, could impede the construction of such a cooling system. The proposed route would be located about 0.5 mile south of the IPEC security barrier, and would not impact construction of a closed-cycle cooling tower.

There is also a difference between the two routes regarding their potential safety risks. Entergy, the operator of the IPEC, stated in a letter to FERC on September 29, 2014, that it is currently opposed to the Northern Route Alternative because it would put the pipeline closer to the IPEC facilities. It also said that, based on currently available information, the Northern Route Alternative could reduce the margin of safety when compared to the proposed route. In contrast, Entergy indicated that "based on the proposed routing of the 42-inch-diameter pipeline further from safety related equipment at IPEC, and accounting for the substantial design and installation enhancements agreed to by [Algonquin], the proposed AIM Project poses no increased risks to IPEC and there is no significant reduction in the margin of safety." The U.S. Nuclear Regulatory Commission (NRC) has concurred with these findings during its own, independent analysis (see section 4.12.3).

While the alternative route crossing for the Hudson River provides certain environmental advantages over the proposed crossing, including its greater distance from St Patrick's Church and Buchanan-Verplanck Elementary School, and its reduction in land disturbance and wetland impacts, the Hudson River Northern Route Alternative would not be technically feasible. The probability of drill failure is significantly higher for the alternative route. If this were to occur, multiple attempts at the HDD or an alternative crossing method (such as the open cut method) could be required, which would increase the time required to complete the crossing and/or result in additional impacts on the environment. We also received many comments concerning the location of the pipeline in relation to the IPEC facilities and potential safety risks. The alternative is currently opposed by Entergy due to its closer proximity to IPEC

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<sup>3</sup> There is insufficient available space on the west side of the Hudson River in the vicinity of Algonquin's existing mainline to assemble the HDD pipeline for pullback operations. The existing mainline passes through residential areas on the west side of the river.



facilities and increased safety risk. Therefore, the alternative route would not be preferable to or provide a significant environmental advantage over the proposed route.

### 3.5.1.2 West Roxbury Lateral Alternative Route

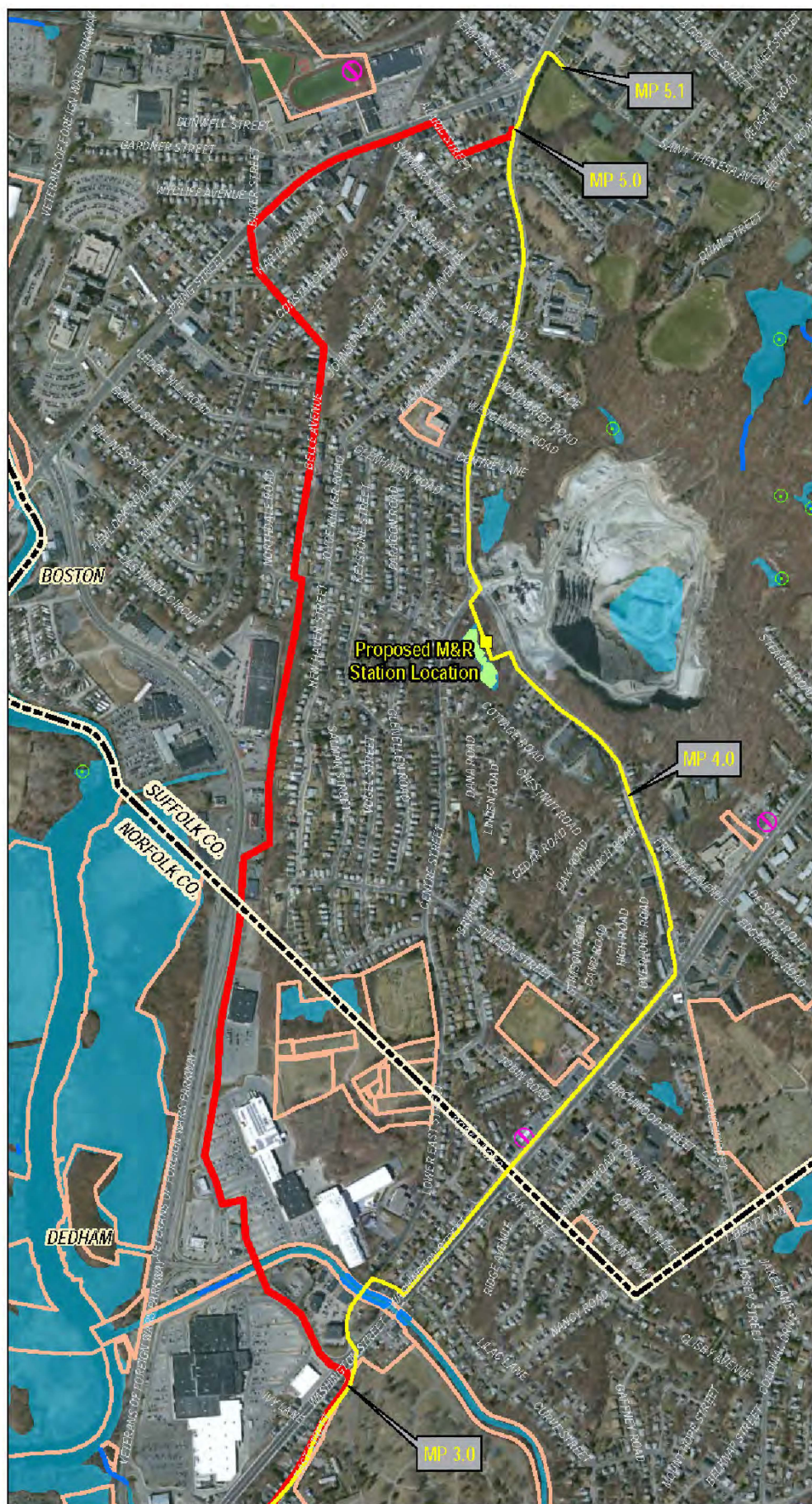
As shown in figure 3.5.1-2, the West Roxbury Lateral Alternative Route originates at about MP 3.0 of the proposed route in the Town of Dedham, Norfolk County, Massachusetts. From this point, the alternate route extends to the northwest for about 0.7 mile, paralleling Incinerator Road and crossing several parking lots and driveways. It then heads north for about 0.5 mile, parallel to and on the east side of State Route 1, crossing into West Roxbury in the City of Boston, Suffolk County, Massachusetts. The alternative route then follows an abandoned right-of-way for about 0.5 mile to the north before intersecting Belle Avenue. From there, the alternative route continues to the north for about 1.0 mile following a number of roads through residential and commercial areas, including Belle Avenue and Baker, Spring, and Alaric Streets. It intersects the proposed route at about MP 5.0.

Table 3.5.1-2 compares crossings of select environmental and other features along the West Roxbury Lateral Alternative Route to the corresponding segment of the proposed route. As shown in the table, the alternative route is about 0.1 mile longer, but would require 0.5 mile less construction within roadways and cross five fewer roads. The alternative route would pass within 50 and 100 feet of fewer residences than the proposed route, but more of the alternative route would pass through residential neighborhoods. Both routes would avoid wetlands and cross the same number of waterbodies.

TABLE 3.5.1-2 Comparison of the West Roxbury Lateral Alternative Route to the Corresponding Segment of the Proposed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Proposed Route	Alternative Route
Length (MPs 3.0 to 5.0)	miles	2.0	2.1
Construction within roadway	miles	1.8	1.3
Number of residences within 50 feet <sup>a</sup>	number	161	83
Number of residences within 100 feet <sup>a</sup>	number	185	132
Wetland crossings	feet	0	0
Waterbody crossings	number	1	1
Road crossings	number	24	19
<sup>a</sup> Includes residential housing complexes. Each contiguous building was counted as a single residence.			

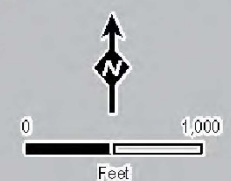
During the initial stakeholder outreach, public officials representing the City of Boston expressed concern to Algonquin regarding the alternative route because of its proximity to residential neighborhoods. The alternative route would cross through the backyards of houses, impact residential streets, and cause significant disruption to the surrounding neighborhoods, particularly along Belle Avenue in West Roxbury. Construction along the alternative route would require the complete closure of streets within these areas. Although the proposed route would pass near more residences, it primarily would be constructed along and within more established roadways (e.g., Washington, Grove, and Centre Streets) and in parking lots of commercial and industrial properties. Additionally, the proposed route would avoid the residential area along Belle Avenue and result in fewer impacts on homes and neighborhoods. For this reason, the West Roxbury Lateral Alternative Route would not be preferable to or provide a significant environmental advantage over the proposed route.





### Legend

- Existing Meter Station
- Proposed Meter Station
- Project Line
- West Roxbury Lateral Alternative
- Algonquin Natural Gas Pipelines
- Town Boundary
- Field Surveyed Stream Centerline
- Field Surveyed Stream Edge
- Field Surveyed Wetland Polygon
- MassDEP AUL Sites
- Certified Vernal Pools
- Potential Vernal Pools
- MassDEP Hydrography
- Open Space
- NHESP Natural Communities
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species
- Outstanding Resource Waters
- MassDEP Wetlands



Sources: BING, ESRI, SPECTRA, MassGIS, MassDEP, USGS

Projection: NAD83, UTM Zone 18N  
US Survey Feet, Grid North.

**Figure 3.5.1-2**  
**AIM Project**  
**West Roxbury Lateral**  
**Alternative Route**

### 3.5.1.3 West Roxbury Lateral South End Alternative Route

As shown in figure 3.5.1-3, the West Roxbury Lateral South End Alternative Route originates just north of Interstate 95 at about MP 0.5 of the proposed route in the Town of Westwood, Norfolk County, Massachusetts. From this point, the alternate route extends to the east/northeast for about 0.5 mile, parallel to and on the north side of Interstate 95, including an off ramp connecting to the Boston Providence Turnpike. The alternative route then heads north for about 0.2 mile, parallel to and east of the Boston Providence Turnpike. It intersects the proposed route at about MP 1.2.

Table 3.5.1-3 compares the West Roxbury Lateral South End Alternative Route to the corresponding segment of the proposed route. While both routes measure about 0.7 mile in length, the alternative route would require 0.5 mile less of construction within roads, pass near fewer residences, and cross two fewer roads than the proposed route. Both routes would avoid wetland and waterbody crossings.

TABLE 3.5.1-3 Comparison of the West Roxbury Lateral South End Alternative Route to the Corresponding Segment of the Proposed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Proposed Route	Alternative Route
Length (MPs 0.5 to 1.2)	miles	0.7	0.7
Construction within roadway	miles	0.6	0.1
Number of residences within 50 feet <sup>a</sup>	number	11	5
Number of residences within 100 feet <sup>a</sup>	number	13	7
Road crossings	number	5	3
Railroad crossings	numbers	1	1
<sup>a</sup> Includes residential housing complexes. Each contiguous building was counted as a single residence.			

The primary advantage of the West Roxbury Lateral South End Alternative Route is that it would avoid construction within Rustcraft Road and Elm Street, which would eliminate impacts adjacent to an apartment complex and several businesses, particularly along Elm Street. The primary disadvantages of the alternative route are that it would parallel Interstate 95, which would result in limited construction workspace; require the removal of existing sound abatement walls along the highway; and result in impacts on several houses. Moreover, installation of the pipeline lateral adjacent to Interstate 95 would be inconsistent with MassDOT's "Policy on the Accommodation of Utilities Longitudinally, Along Controlled-Access Highways," which precludes the placement of utility infrastructure parallel to the interstate highway system absent extenuating circumstances.

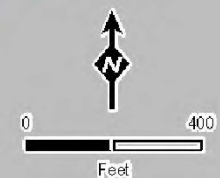
Several commentors believe that MassDOT's policy should not be considered over local preferences and believe that the Project poses "extenuating circumstances" warranting a waiver of MassDOT's policy. Impacts on the public for the proposed route are addressed throughout section 4. We do not find that the Project, as proposed with Algonquin's mitigation measures, would result in significant impacts along the southern portion of the West Roxbury Lateral, including traffic impacts at the intersection of Elm Street and Providence Highway. Therefore, we disagree that requesting a waiver of MassDOT's policy is warranted simply for local convenience. Additional considerations of local impacts for the alternative route are discussed below.





### Legend

- Existing Meter Station
- Proposed Meter Station
- Project Line
- West Roxbury Lateral
- South End Alternative
- Algonquin Natural Gas Pipelines
- Town Boundary
- Field Surveyed Stream Centerline
- Field Surveyed Stream Edge
- Field Surveyed Wetland Polygon
- MassDEP AUL Sites
- Certified Vernal Pools
- Potential Vernal Pools
- MassDEP Hydrography
- Open Space
- NHESP Natural Communities
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species
- Outstanding Resource Waters
- MassDEP Wetlands



Sources: BING, ESRI, SPECTRA, MassGIS, MassDEP, USGS

Projection: NAD83, UTM Zone 18N  
US Survey Feet, Grid North

**Figure 3.5.1-3**  
**AIM Project**  
**West Roxbury South End**  
**Alternative Route**

The West Roxbury Lateral South End Alternative Route would result in direct impacts on two residences adjacent to the off ramp connecting Interstate 95 with State Route 1A, near Robinwood Road. The residences are located about 10 and 20 feet from the sound abatement wall for the highway. Installing the pipeline through this area would require the temporary removal of the sound abatement wall resulting in highway traffic noise for several months at the residences until the wall could be replaced.

The alternative route would also impact three commercial properties and two motel properties. Due to the existing elevated slope along Interstate 95, extensive grading would be required to install the pipeline adjacent to the highway. This would require ATWS and additional tree clearing along the highway. The additional tree clearing would result in the permanent removal of privacy/nuisance screening between the commercial and motel properties along the Interstate 95 corridor.

Another disadvantage of the alternative route would be traffic impacts on the Legacy Place shopping area in the Town of Dedham. The focus of Legacy Place's concern at the shopping mall is the ability to manage traffic impacts during construction. The West Roxbury Lateral South End Alternative Route would affect traffic at two of the three ingress/egress points for Legacy Place. Additionally, the crossing of the intersection of Elm Street and the Providence Highway could disrupt traffic entering and exiting Legacy Place along Elm Street. See section 4.9.5 for a discussion of traffic impacts that would result from construction of the proposed route.

In consideration of the potential impacts on residences and businesses, as well as constraints associated with installation of the pipeline adjacent to an interstate highway, as documented in our analysis, the West Roxbury Lateral South End Alternative Route would not be preferable to or provide an environmental advantage over the proposed route.

#### **3.5.1.4 Minor Route Variations**

Algonquin incorporated six minor route variations along different segments of the proposed pipeline facilities to avoid or reduce impacts on environmental or other resources, resolve engineering issues, or address stakeholder concerns (e.g., to minimize impacts on a golf course). Each of these route variations was incorporated into the Project design by Algonquin prior to issuance of the draft EIS as part of the proposed action. Information on the six route variations, including their purpose and primary advantages and disadvantages relative to the original route, is provided in table 3.5.1-4. We have reviewed the information filed by Algonquin on these six route variations and our analysis of the proposed route in section 4.0 of this EIS includes these variations as part of the proposed action except where changed by modifications made following issuance of the draft EIS (see section 3.5.2). At the time of the draft EIS, we concurred with these route variations.

At the time of the draft EIS, we had also evaluated an additional route variation, the Catskill Aqueduct Variation, between MPs 10.2 and 10.3 of the Stony Point to Yorktown Take-up and Relay segment in Westchester County, New York. However, the results of soil investigations and geotechnical work were pending at the time. Additional information is now available and a revised evaluation has been conducted (see section 3.5.2.1).

#### **3.5.2 Route Alternatives and Variations Evaluated After Issuance of the Draft EIS**

Following issuance of the draft EIS, Algonquin evaluated several route variations it incorporated into its proposed route and we received comments requesting that we evaluate additional alternatives and variations to the proposed route. Our assessment of these alternatives and variations is included below.

TABLE 3.5.1-4

**Minor Route Variations Incorporated into the AIM Project Prior to Issuance of the Draft EIS**

Milepost		County/ State	Length (feet)	Description	Primary Advantages	Primary Disadvantages
Start	End					
Haverstraw to Stony Point Take-up and Relay – Stacey Court Variation						
1.7	1.9	Rockland, NY	1,000	The route variation is offset about 40 feet to the south of the existing pipeline.	The route variation would reduce impacts on existing and planned future residences.	The route variation would require an additional 0.8 acre of tree clearing.
Stony Point to Yorktown Take-up and Relay – Route 9 Route Variation						
5.8	5.9	Westchester, NY	528	The route variation is offset between about 20 and 50 feet to the north of the existing pipeline.	The route variation would provide a better alignment for a trenchless crossing of Route 9.	The route variation would require an additional 0.1 acre of temporary workspace and 0.1 acre of permanent easement.
West Roxbury Lateral – Norfolk Golf Club Variation						
0.0	0.1	Norfolk, MA	370	The route variation is offset about 175 feet to the southwest of the original route.	The route variation would avoid a compost area at the Norfolk Golf Club, which was requested by the landowner.	The route variation would cross a tee box, fairway, and water hazard on the golf course. A new route variation in this area was analyzed following issuance of the draft EIS (see section 3.5.2).
West Roxbury Lateral – Soccer Field Variation						
2.4	2.6	Norfolk, MA	792	The route variation is offset about 175 feet to the east of the original route.	The route variation would avoid placement of the pipeline within a roadway entrance to Staples; the route variation additionally would avoid land use conflicts with planned future expansions of the Harris Street Bridge and Boston Providence Turnpike by MassDOT.	The route variation would result in an additional 0.3 acre of impact within a soccer field at Gonzalez Field. A new route variation in this area was analyzed following issuance of the draft EIS (see section 3.5.2).
West Roxbury Lateral – Mother Brook Variation						
3.0	3.2	Norfolk, MA	845	The route variation is offset up to about 250 feet to the northwest of the original route.	The route variation would allow for a crossing of Mother Brook without the need to close Washington Street, which would minimize traffic impacts.	The route variation would result in temporary construction impacts on businesses and homes along Eastbrook Road and Post Lane. A new route variation in this area was analyzed following issuance of the draft EIS (see section 3.5.2).
West Roxbury Lateral – Centre Street Variation						
5.1	5.1	Suffolk, MA	422	The route variation extends the northern terminus of the West Roxbury Lateral to facilitate a tie-in with existing Boston Gas facilities.	The route alternative would avoid construction activities at the intersection of Centre and Spring Streets, which would minimize traffic impacts.	The route variation would require construction adjacent to St. Theresa of Avila Parish and School. A new route variation in this area was analyzed following issuance of the draft EIS (see section 3.5.2).



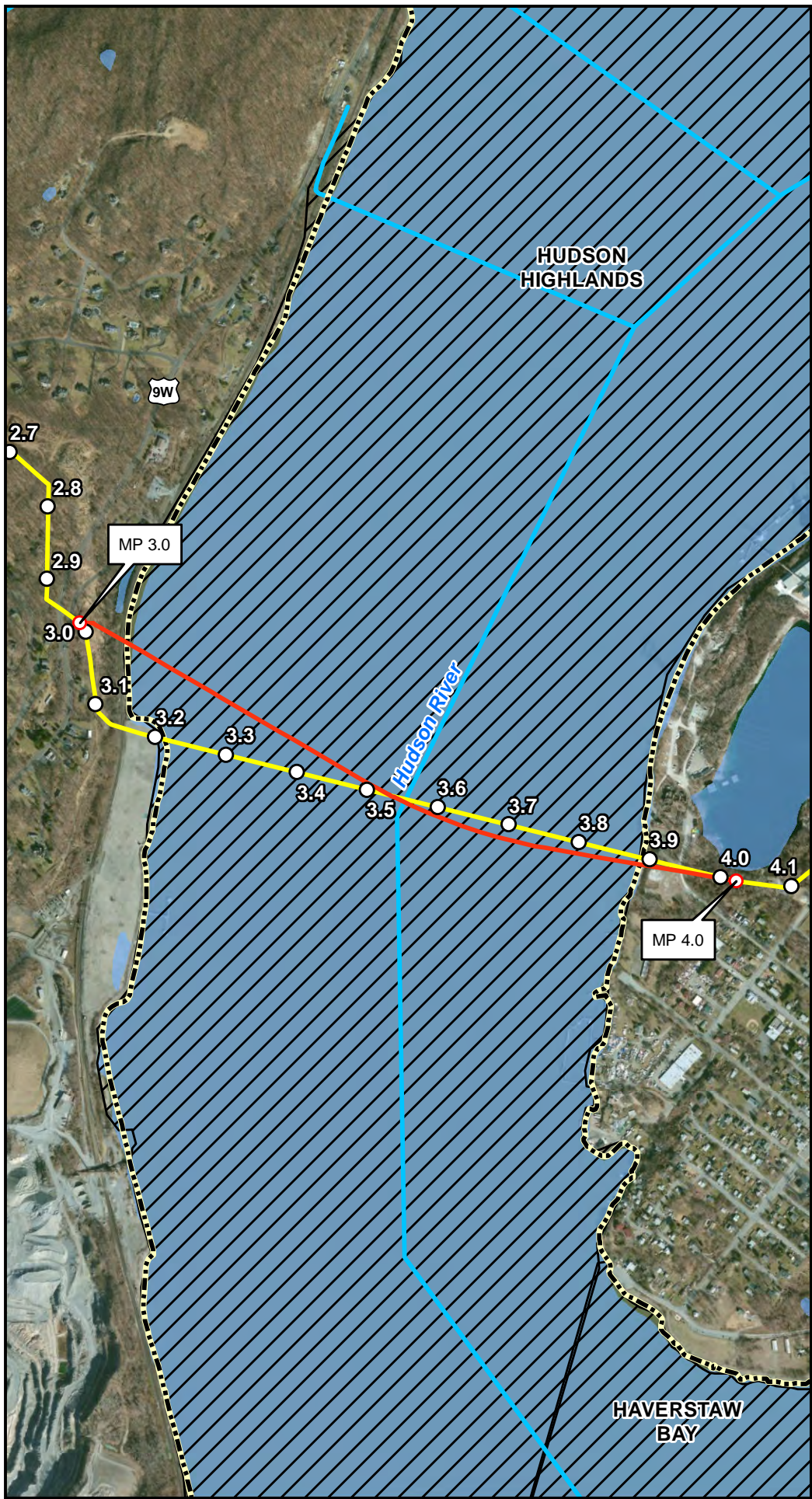
### 3.5.2.1 Stony Point to Yorktown Take-up and Relay Segment Alternatives and Variations

#### Hudson River HDD Variation

Algonquin has continued to finalize the design details of the Hudson River HDD. This included evaluating possible engineering options to safely penetrate the existing sheet pile wall at the current entry/exit side on the west side of the river. According to Algonquin, as the detailed design progressed, Algonquin was notified by the landowner, NRG Lovett, LLC, that the location of the proposed HDD entry/exit location on the west side of the river within the former NRG Lovett, LLC power plant property is now occupied by contractors responsible for the construction of the new Tappan Zee Bridge. Following additional engineering evaluation, Algonquin also recognized that constructing the pipe penetration through the existing sheet pile wall would pose significant challenges and that in-water work within the Hudson River would be required to complete this aspect of the construction. To mitigate the effects of these challenges, Algonquin evaluated relocating the western HDD entry/exit point about 850 feet northwest of the previously proposed location. The new length of the Hudson River HDD would be 5,090 feet. As shown on figure 3.5.2-1, the new entry/exit location would be located close to the previously proposed alignment on property also owned by NRG Lovett, LLC. A new temporary access road would be required to access the new HDD entry/exit location on the west side of the river. This new access road, which is about 50 feet long, is an existing unimproved road that extends from West Shore Drive, which is currently used to provide access to the existing overhead power lines. This new access road would not require any permanent improvements.

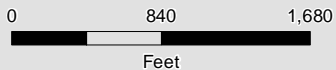
An environmental comparison of the Hudson River HDD Alignment Variation (MPs 3.0 to 4.0) to the previously proposed route is presented in table 3.5.2-1. Overall the length of the variation would be slightly shorter, but the length of the HDD segment of the variation would increase from 4,452 feet to 5,090 feet. The substrate crossed by the adjusted Hudson River HDD alignment would not change (i.e., like the previously proposed HDD alignment, the new HDD alignment would remain within the soft sediments beneath the river). The potential noise impact due to HDD construction activities at the surrounding noise-sensitive areas (NSA) would not be significantly different between the two routes. Moreover, the variation would reduce wetland impacts by about 0.1 acre, and while there is a small isolated *Phragmites*-dominated wetland within the proposed workspace for the HDD variation, this wetland would be enclosed with silt fence and not directly impacted by construction. The variation would also have the following advantages over the previously proposed route. Specifically, it would:

- reduce the overall construction workspace required from 4.7 to 3.0 acres;
- avoid the logistical concerns associated with the Tappan Zee Bridge construction activities on the former NRG Lovett, LLC power plant property;
- eliminate the required in-water construction activities necessary to support construction through the existing sheet pile wall along the perimeter of the former NRG Lovett, LLC power plant property;
- avoid what Algonquin has termed the complex construction associated with penetrating the existing sheet pile wall with casing pipe; and
- eliminate the need for crossing the existing railroad tracks to access the construction site with equipment, materials, and personnel on a daily basis.



**Legend**

- Mileposts
- Previously Proposed Route
- Hudson River HDD Variation
- Significant Coastal Fish and Wildlife Habitat
- NHD Stream/River
- NWI Wetlands



**Figure 3.5.2-1**  
**AIM Project**  
**Stony Point to Yorktown**  
**Take-up and Relay**  
Hudson River HDD  
Variation

TABLE 3.5.2-1

**Comparison of the Hudson River HDD Alignment Variation to the  
Corresponding Segment of the Previously Filed Route for the AIM Project**

Environmental/Engineering Factor	Unit	Previously Filed Route	Variation (Currently Proposed Route)
Length (MPs 3.0 to 4.0)	miles	0.99	0.96
Land temporarily affected during construction	acres	4.7	3.0
New land permanently affected for operation	acres	1.3	0.2
Number of residences within 50 feet	number	0	0
Wetlands affected	acres	0.1	0
Waterbody crossings	number	0	0
Road crossings	number	1	1
Railroad crossings	number	1	1

Because this HDD alignment shift avoids conflicts with the construction laydown area for the Tappan Zee Bridge contractors, avoids in-water construction work related to penetrating the sheet pile wall at the current entry/exit site, and results in an overall reduction in construction workspace, we find it is preferable to the corresponding segment of the previously proposed alignment and concur with Algonquin's proposal to incorporate it and the proposed workspace modification into the proposed route and Project design.

#### **Blue Mountain Reservation Variation**

We evaluated a potential pipeline variation to the north of the current pipeline right-of-way in the Blue Mountain Reservation in response to a comment we received about the proximity of the pipeline to a pond located south of the alignment between MPs 7.97 and 8.01 and concerns about the potential impact of construction in this area on amphibians. The proposed pipeline route and construction workspace in this area would be located in uplands between 20 and 65 feet north of the wetland bordering the pond. Algonquin would replace the existing pipeline with the new pipeline in the same trench as the existing pipeline to be removed. The variation would shift the pipeline alignment about 100 feet to the north. Because there is another utility corridor abutting the north side of Algonquin's existing right-of-way at this location, the variation would need to cross this utility corridor twice, once to put the proposed pipeline north of the corridor and then a second time to return to the proposed alignment after passing by the pond. These crossings of the existing utility corridor and the new right-of-way resulting from the shift would increase the amount of temporary and permanent workspace and land disturbance as well as the amount of temporary and permanent forest clearing that would be needed to install the pipeline. Although we recognize the proximity of the proposed route to the pond may increase the potential to encounter amphibians, we do not believe this outweighs the impact of the extra right-of-way and tree clearing that would be required for the alternative, especially because the impacts of the proposed route would be minimized by Algonquin's implementation of its E&SCP. Therefore, we do not find the Blue Mountain Reservation Variation should be incorporated into the proposed route.

#### **Catskill Aqueduct Variation**

At the time of the draft EIS, we had conducted a preliminary evaluation of the Catskill Aqueduct Variation, between MPs 10.2 and 10.3 of the Stony Point to Yorktown Take-up and Relay segment in Westchester County, New York, and found it acceptable but not preferable to the previously proposed route. However, soil investigations and geotechnical work was pending at the time. The existing mainline pipelines at this location cross the Catskill Aqueduct near its intersection with Croton Avenue.



Algonquin's previously proposed action was to replace the existing 26-inch-diameter pipeline with a 42-inch-diameter pipeline along the same alignment. Based on the additional geotechnical work, engineering studies, and information obtained from the NYCDEP, Algonquin is now proposing to incorporate the Catskill Aqueduct Variation into its Project design. The variation would move the pipeline route about 50 feet south of the current alignment to achieve sufficient vertical clearance between the new pipeline and the Catskill Aqueduct. The variation would also provide improved alignment and workspace to complete the crossing of Croton Avenue and the aqueduct. The variation would diverge from the existing 26-inch-diameter pipeline for about 500 feet, about 280 feet before Croton Avenue and then continuing across Croton Avenue to about 150 feet past the aqueduct. Algonquin has indicated that the variation could be accommodated without any change in the proposed workspace. Algonquin would also remove the existing 26-inch-diameter pipeline and casing, but would not disturb the existing protective concrete slab, pending concurrence from NYCDEP.

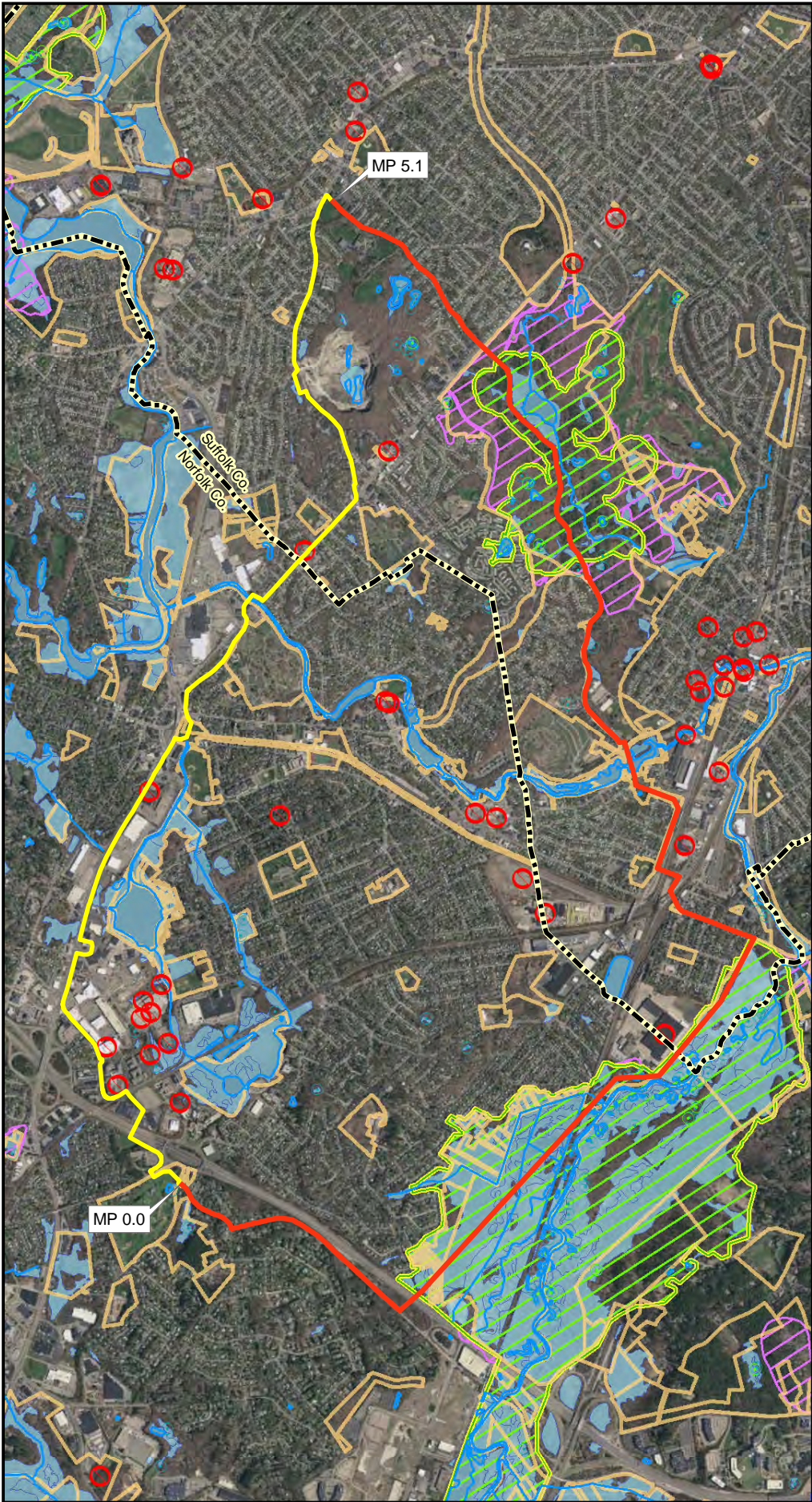
Environmental impacts associated with the corresponding segment of the previously proposed action and the Catskill Aqueduct Variation would be similar, though the route variation would require more tree clearing than the previously proposed alignment. However, this would be offset by the more preferable alignment across Croton Avenue and the Catskill Aqueduct. Algonquin would also implement several measures to minimize impacts on the aqueduct, including installation of an 8-inch-thick concrete slab about 2 feet above the aqueduct and installation of steel casing pipe around the pipeline. Based on the advantages of a more preferable alignment across Croton Avenue and the aqueduct, we find the Catskill Aqueduct Variation to be preferable and agree with its incorporation into the proposed Stony Point to Yorktown Take-up and Relay segment.

### **3.5.2.2 West Roxbury Lateral Alternatives and Variations**

#### **Neponset River State Park and Stony Brook State Reservation Alternative**

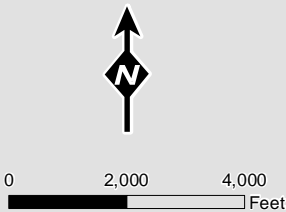
A commentor suggested an alternative that would cross the Neponset River State Park and Stony Brook Reservation, with the goal of reducing residential impacts and safety risks. We identified and evaluated a route that would begin at the same location as the proposed route then cross the Norfolk Golf Club before entering Canton Street and proceeding southeast to Blue Hill Drive. The alternative would be installed within these roads and would cross Interstate 95, after which it would enter Neponset River State Park. From there it would proceed northeast across the length of the park crossing wetlands and streams and the Neponset River twice before joining up with and following the east side of Meadow Road still within the park. Upon reaching Neponset Valley Parkway, the alternative would turn and proceed north and west within the parkway to River Street where, after a short distance, it would cross Mother Brook Pond. On the north side of the pond it would follow Turtle Pond Parkway within the road northwest to Enneking Parkway. From there it would follow the west side of Enneking Parkway across the Stony Brook State Reservoir. Near the north end of the state reservoir property, the alternative would turn to the northwest and follow Maplewood Street to St. Theresa Avenue and then St. Theresa Avenue until it joins the end of the proposed lateral and the proposed West Roxbury M&R Station site. Figure 3.5.2-1 shows the location of the alternative considered.





**Legend**

- Project Line
- Route Alternative
- MassDEP AUL Sites
- Certified Vernal Pools
- Potential Vernal Pools
- MassDEP Hydrography
- Open Space
- NHESP Natural Communities
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species
- Outstanding Resource Waters
- MassDEP Wetlands



**Figure 3.5.2-2**  
**AIM Project**  
**West Roxbury Lateral**  
 Neponset River State Park  
 and Stony Brook State  
 Reservation Alternative



As indicated in table 3.5.2-2, the alternative would be about 2 miles longer than the proposed route but would reduce in-street construction by about 1.0 mile. However, a greater percentage of the in-street work associated with the alternative would be in residential areas versus commercial areas, such that the alternative would increase the crossing of residential neighborhoods by 0.9 mile. The alternative would also increase the crossing of public lands associated with Neponset River State Park and Stony Brook Reservation and would include four more waterbody crossings than the proposed route. Both routes would cross Mother Brook, but the crossing area of Mother Brook along the alternative would be at a point where the brook is ponded due to a nearby downstream dam. A pipeline crossing at this location would be very challenging due to workspace constraints but we were not able to find a more suitable crossing site. The alternative would also result in more tree clearing and would impact about 13.9 acres of wetlands, including 7.4 acres of woody wetlands, mostly within the Neponset River State Park, that would be completely avoided by the proposed route. The alternative would also preclude Algonquin's adoption and the resulting benefits of the St. Theresa Parish Variation. This variation, which was proposed after the draft EIS was issued, would eliminate about 375 feet of the previously proposed route along St. Theresa Avenue, which serves as the primary entrance road for both St. Theresa Parish and School and The Roxbury Latin School (see a discussion of this variation below). For these reasons, we do not believe the Neponset River State Park and Stony Brook State Reservation Alternative would be preferable to the proposed West Roxbury Lateral Route; therefore, it was eliminated from further consideration.

TABLE 3.5.2-2			
Comparison of the Neponset River State Park and Stony Brook State Reservation Alternative to the Corresponding Segment of the Proposed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Proposed Route	Alternative
Length (MPs 0.0 to 5.1)	miles	5.1	7.1
In-street construction	miles	4.7	3.7
Total wetlands affected	acres	0.0	13.9
Woody wetlands affected	acres	0.0	7.4
Waterbody crossings	number	1	5
Residential neighborhoods crossed <sup>a</sup>	miles	2.1	3.0
Commercial areas crossed <sup>b</sup>	miles	2.6	0.7
<sup>a</sup> Reflects miles of in-street construction that would be within primarily residential neighborhood streets			
<sup>b</sup> Reflects miles of in-street construction that would within primarily commercial areas			

### Norfolk Golf Club Variation

Through its consultations with and at the request of the Norfolk Golf Club in Westwood, Massachusetts, Algonquin evaluated a route variation across the golf course between MPs 0.0 and 0.2 (see figure 3.5.2-3). At its furthest point, this variation would be about 197 feet west of the previously proposed route. As shown in table 3.5.2-3, the variation is shorter and would require less temporary and permanent right-of-way. It would also affect less playable area of the golf course and avoid the existing tee box for the 5<sup>th</sup> hole. To further reduce impacts on use of and business operation at the golf course, Algonquin has committed to complete construction across the golf course in the fall or winter months, which would allow for full restoration of the golf course features by the following season. Based on the advantages of minimizing impacts on the golf course and the fact that the area of impact of the new route alignment would be less than that of the corresponding segment of the previously proposed route, we find the Norfolk Golf Club Variation to be preferable and agree with its incorporation into the proposed West Roxbury Lateral pipeline route.



### Legend

- Mileposts
- Previously Proposed Route
- Norfolk Golf Club Variation
- Potential Vernal Pools
- MassDEP Hydrography
- Open Space
- MassDEP Wetlands



0 100 200  
Feet

**Figure 3.5.2-3**  
**AIM Project**  
**West Roxbury Lateral**  
**Norfolk Golf Club Variation**  
MP 0.02 to MP 0.16

TABLE 3.5.2-3

**Comparison of the Norfolk Club Variation to the  
Corresponding Segment of the Previously Filed Route for the AIM Project**

Environmental/Engineering Factor	Unit	Previously Filed Route	Variation (Currently Proposed Route)
Length (MPs 0.0 to 0.2)	miles	0.16	0.12
Land temporarily affected during construction	acres	1.3	1.2
New land permanently affected for operation	acres	0.8	0.4
Number of residences within 50 feet	number	0	0
Wetlands affected	acres	0	0
Waterbody crossings	number	0	0
Road crossings	number	0	0

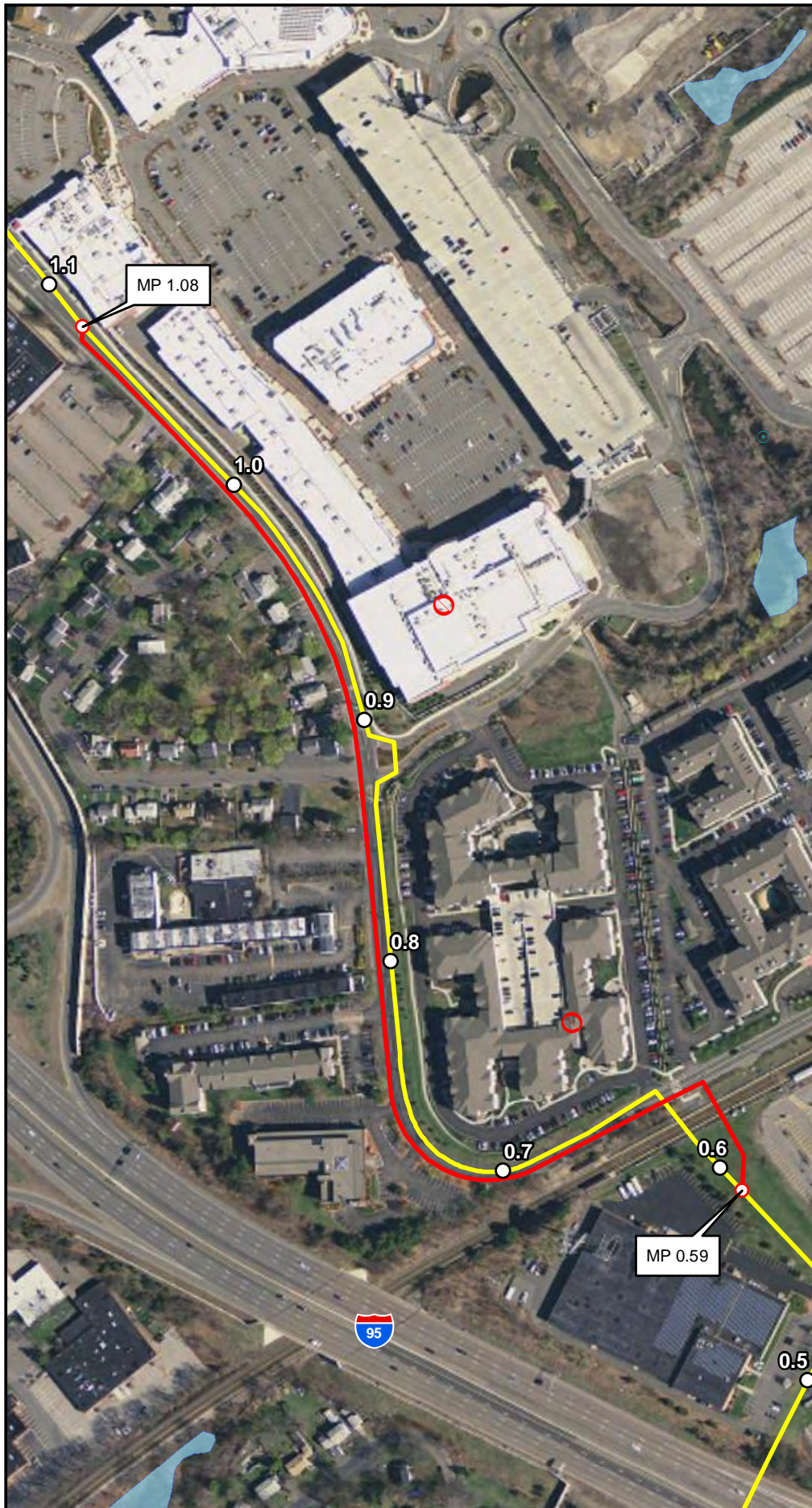
### **Massachusetts Bay Transit Authority Variation**

Algonquin evaluated a route variation between MPs 0.6 and 1.1 to address design considerations at the existing Massachusetts Bay Transit Authority crossing and avoid utilities within Elm Street. The shift, as shown in figure 3.5.2-4, would also move the pipeline in Rustcraft Road and Elm Street to the side away from Legacy Place and reduce potential impact on a planned “kiss and ride” parking area that will be built on Rustcraft Road. According to Algonquin, both Legacy Place and National Amusements have acknowledged that the proposed shift in alignment would be preferable to the previously proposed route because it shifts the construction away from the three exit and entrance points into Legacy Place that were crossed by the corresponding segment of the previously proposed route. Algonquin has also agreed to maintain at all times one paved lane for each turning movement during construction of the pipeline and would complete the installation of the pipeline within Providence Highway at night between 9:00 p.m. and 5:00 a.m. Based on the advantages of minimizing impacts on access to Legacy Place, we find the Massachusetts Bay Transit Authority Variation to be preferable and agree with its incorporation into the proposed West Roxbury Lateral pipeline route.

### **Gonzalez Field Variation**

Algonquin evaluated the Gonzalez Field Variation based on further discussions with the Dedham Parks and Recreation Department, which requested that Algonquin revisit the need for the route across the field to avoid a potential future bridge expansion, and the MassDOT. Algonquin’s original alignment was designed based on the understanding that the MassDOT had plans to expand the Harris Street Bridge. Upon Algonquin's further consultation, the MassDOT indicated that it has no foreseeable plans to expand the bridge. Therefore, MassDOT agreed that Algonquin could revise its alignment across Gonzalez Field by placing the pipeline closer to the Harris Street Bridge but not within the sloped area. As a result and as shown in figure 3.5.2-5, Algonquin is proposing a modified route alignment across Gonzalez Field that moves the proposed pipeline closer to Providence Highway. As shown in table 3.5.2-4, the variation would be shorter and would minimize impacts on the recreational field as well as reduce the amount of temporary and permanent right-of-way required. To further minimize impacts, Algonquin has also agreed to defer construction across Gonzalez Field until after the conclusion of the Town’s soccer program in the fall. Based on the advantages of minimizing impacts on the recreational field and the fact that the environmental impacts of the new route alignment would be less than that of the previously proposed route, we find the Gonzalez Field Variation to be preferable and agree with its incorporation into the proposed West Roxbury Lateral pipeline route.





### Legend

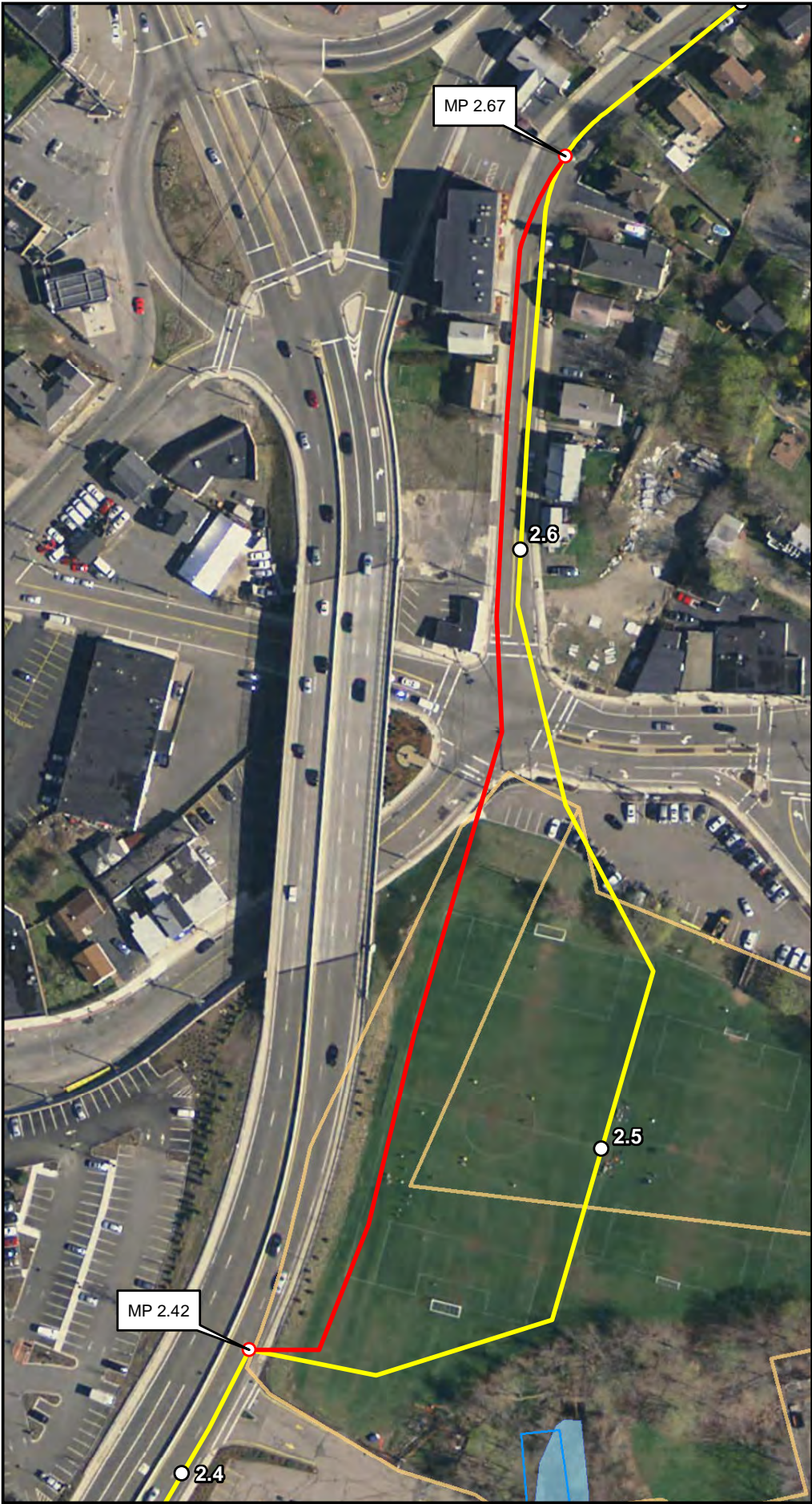
- Mileposts
- Previously Proposed Route
- Massachusetts Bay Transit Authority Variation
- MassDEP AUL Sites
- Potential Vernal Pools
- MassDEP Wetlands



0 230 460  
Feet

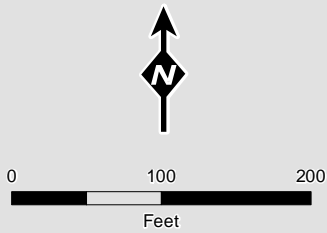
**Figure 3.5.2-4**  
**AIM Project**  
**West Roxbury Lateral**  
Massachusetts Bay Transit  
Authority Variation  
MP 0.59 to MP 1.08





**Legend**

- Mileposts
- ↗ Previously Proposed Route
- ↗ Gonzales Field Variation
- ↗ MassDEP Hydrography
- Open Space
- MassDEP Wetlands



**Figure 3.5.2-5**  
**AIM Project**  
**West Roxbury Lateral**  
 Gonzales Field Variation  
 MP 2.42 to MP 2.67

TABLE 3.5.2-4			
Comparison of the Gonzalez Field Variation to the Corresponding Segment of the Previously Filed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Previously Filed Route	Variation (Currently Proposed Route)
Length (MPs 2.4 to 2.7)	miles	0.3	0.1
Land temporarily affected during construction	acres	1.4	1.0
New land permanently affected for operation	acres	0.8	0.4
Number of residences within 50 feet	number	0	0
Wetlands affected	acres	0	0
Waterbody crossings	number	0	0
Road crossings	number	0	0

### Mother Brook Variation

Algonquin's previously proposed route deviated from Washington Street to avoid an existing box culvert that carried Mother Brook under Washington Street. Algonquin has had subsequent discussions with MassDOT and obtained the design details of the box culvert under Washington Street as well as other buried utilities. Based on this new information, Algonquin has determined that there is sufficient space above the box culvert to accommodate the pipeline within Washington Street. As a result and as shown in figure 3.5.2-6, Algonquin evaluated a variation to continue the pipeline within Washington Street between MPs 3.0 and 3.2 to avoid both the crossing of Mother Brook and the disturbance to other nearby residences and businesses along Eastbrook Street and Lower East Street. Algonquin is also proposing a shift in the pipeline location within Washington Street, between MPs 3.2 and 3.8, by about 25 feet from the westbound travel lane to the eastbound travel lane to avoid an existing buried Massachusetts Water Resources Authority water line. Algonquin is not proposing any workspace changes within this section of the route shift (i.e., between MPs 3.2 and 3.8).

A comparison of the environmental impacts of the variation versus the corresponding segment of the previously proposed route is provided in table 3.5.2-5. The advantages of the variation and pipeline shift are that they would avoid direct impacts on Mother Brook, avoid temporary construction impacts on businesses and homes along Eastbrook Street and Lower East Street, and avoid impacting the existing Massachusetts Water Resources Authority water line within Washington Street. Based on these advantages, we find the Mother Brook Variation to be preferable and agree with its incorporation into the proposed West Roxbury Lateral pipeline route.

TABLE 3.5.2-5			
Comparison of the Mother Brook Variation to the Corresponding Segment of the Previously Filed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Previously Filed Route	Variation (Currently Proposed Route)
Length (MPs 3.0 to 3.8)	miles	0.83	0.14
Land temporarily affected during construction	acres	1.56	1.38
New land permanently affected for operation	acres	0	0
Number of residences within 50 feet <sup>a</sup>	number	50	48
Wetlands affected	acres	0	0
Waterbody crossings	number	1	0
Road crossings <sup>b</sup>	number	8	8

<sup>a</sup> Includes residential housing complexes. Each contiguous building was counted as a single residence.

<sup>b</sup> Although the number of road crossings is the same for the variation and the filed route, the variation avoids in-road construction along Eastbrook Road and Post Lane/Lower East Street.





### Legend

- Mileposts
- ↗ Previously Proposed Route
- ↗ Mother Brook Route Variation
- ⊘ MassDEP AUL Sites
- ↗ MassDEP Hydrography
- Open Space
- MassDEP Wetlands



0 460 920  
Feet

**Figure 3.5.2-6**  
**AIM Project**  
**West Roxbury Lateral**  
Mother Brook Route  
Variation  
MP 2.99 to MP 3.82

## St. Theresa Parish Variation

Stakeholders along St. Theresa Avenue requested an alternative that would avoid conflict with access to the St. Theresa Parish and School and The Roxbury Latin School. As a result of discussions with National Grid and several stakeholders along St. Theresa Avenue, Algonquin incorporated a route variation into the proposed route that relocates the end point of the West Roxbury Lateral to the north side of the intersection of Spring Street and Centre Street where the West Roxbury Lateral would connect to the existing National Grid pipeline system. With this change, the West Roxbury Lateral would connect directly to the National Grid pipeline system, and Algonquin would no longer require the buried vault-type of installation initially proposed. As shown in table 3.5.2-6 and on figure 3.5.2-7, the variation would eliminate about 375 feet of the previously proposed route along St. Theresa Avenue, which serves as the primary entrance road for both St. Theresa Parish and School and The Roxbury Latin School, and as a result, no portion of St. Theresa Avenue would be impacted by construction. According to Algonquin, it has discussed this route variation with representatives of both St. Theresa Parish and the Roxbury Latin School and it addresses these organizations' concerns regarding the potential impacts on their facilities. The route variation would also reduce the construction workspace by 0.5 acre. Because of these advantages, we find the St. Theresa Parish and School Variation to be preferable to the corresponding segment of the previously proposed route and agree with its incorporation into the West Roxbury Lateral pipeline route.

TABLE 3.5.2-6 Comparison of the St. Theresa Parish Variation to the Corresponding Segment of the Previously Filed Route for the AIM Project			
Environmental/Engineering Factor	Unit	Previously Filed Route	Variation (Currently Proposed Route)
Length (MPs 5.06 to 5.10)	miles	0.07	0.01
Land temporarily affected during construction	acres	0.81	0.31
New land permanently affected for operation	acres	0	0
Number of residences within 50 feet <sup>a</sup>	number	0	0
Wetlands affected	acres	0	0
Waterbody crossings	number	0	0
Road crossings	number	2	1
<sup>a</sup> Although no residences are located within 50 feet of the variation or the filed route, the variation would avoid one commercial structure and one church that are located within 50 feet of the filed route.			



### 3.5.2.3 Summary of Route Alternatives and Variations Evaluated After Issuance of the Draft EIS

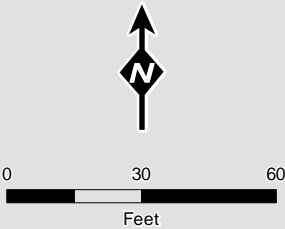
Table 3.5.2-7 summarizes the route alternatives and variations evaluated after issuance of the draft EIS and whether they were incorporated into the proposed route. For those that have been incorporated into the proposed route, the analysis in section 4 of this EIS reflects those modifications.





**Legend**

-  Previously Proposed Route
-  St. Theresa Parish



**Figure 3.5.2-7**  
**AIM Project**  
**West Roxbury Lateral**  
St. Theresa Parish Variation  
MP 5.07 to MP 5.08

TABLE 3.5.2-7

**Summary of Route Alternatives and Variations Evaluated After Issuance of the Draft EIS**

Alternative/Variation	Milepost Range	Incorporated Into Proposed Route
<b>Stony Point to Yorktown Take-up and Relay</b>		
Hudson River HDD Variation	3.0 to 4.0	Yes
Blue Mountain Reservation Variation	7.97 to 8.01	No
Catskill Aqueduct Variation	10.2 to 10.3	Yes
<b>West Roxbury Lateral</b>		
Neponset River State Park and Stony Brook State Reservation Alternative	0.0 to 5.1	No
Norfolk Golf Club Variation	0.0 to 0.2	Yes
Massachusetts Bay Transit Authority Variation	0.6 to 1.1	Yes
Gonzalez Field Variation	2.4 to 2.7	Yes
Mother Brook Route Variation	3.0 to 3.8	Yes
St. Theresa Parish and School Variation	5.07 to 5.08	Yes

### 3.5.3 Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After the Draft EIS

In addition to route alternatives and variations, several pipeline shifts, workspace adjustments, and design modifications were proposed by Algonquin or suggested by commentors after issuance of the draft EIS. Our assessment of these adjustments and modifications is included in table 3.5.3-1 below. For those that have been incorporated into the proposed Project design, the analysis in section 4 of this EIS reflects those modifications.

### 3.5.4 Alternative Construction Methods Evaluated After Issuance of the Draft EIS

We received comments asking us to evaluate different construction methods for various waterbody and wetland crossings. Our evaluation is included below.

#### 3.5.4.1 Hudson River

We received comments on the draft EIS asking why we did not analyze alternative crossing methods for the proposed Hudson River crossing but instead limited our review to the HDD crossing method. Other alternatives were not thoroughly evaluated because we do not believe an alternative crossing method would offer any significant environmental advantages. The HDD method is recognized as the environmentally preferred method, and is now becoming industry standard, for crossing large and sensitive waterbodies, if conditions allow, because it installs the pipeline beneath the waterbody without impacting the bed or banks. An alternative to using the HDD method would be an open-cut crossing (other dry crossing methods such as a dam-and-pump or flume would not be practicable due to the size of the river). The impacts of the open-cut construction method would include water quality impacts associated with clearing, grading, and trenching within and adjacent to the river. Sediments would be suspended by in-water construction activities and there would be an increased potential for erosion of cleared river banks and riparian areas. Turbidity resulting from the sediments suspended during in-water trenching and backfilling operations could reduce light penetration and the corresponding photosynthetic oxygen production. The resuspension of deposited organic material and inorganic sediments could also cause an increase in consumption of biological and chemical oxygen, decreasing available dissolved oxygen. Based on these effects and the potential to avoid these effects using the HDD method, we did not consider an open-cut crossing of the Hudson River preferable.

TABLE 3.5.3-1

**Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After Issuance of the Draft EIS**

Segment/ Milepost(s)	Municipality, State	Type of Modification	Description and Evaluation	Incorporated Into Project Design
<b>Stony Point to Yorktown Take-up and Relay</b>				
4.0 to 4.3	Verplanck/ Cortlandt, NY	Hudson River HDD pullback workspace addition and temporary access road adjustment	As a result of the modifications to the proposed entry/exit location and slightly longer length of the Hudson River HDD described above, Algonquin proposes to add 50 feet of ATWS width along the north side of the previously proposed pullback workspace on the exit side of the HDD. Algonquin says the ATWS is necessary to accommodate the fabrication of four pullback pipe strings that would be necessary to complete the HDD. The ATWS would result in 1.6 acres of additional forest clearing impacts. Algonquin also proposes to reduce the length of TAR 4.4 on the east side of the river by 440 feet. The temporary access would terminate at the HDD pullback workspace and would no longer extend to 11th Street in Verplanck. Because we believe this additional workspace is required to facilitate the successful completion of the HDD, and because the revised temporary access road would reduce impacts, we concur with Algonquin's proposal to incorporate the proposed changes into the Project design.	Yes
5.7 to 5.9	Peekskill/ Cortlandt, NY	Pipeline shift	Algonquin proposes to abandon in-place about 1,003 feet of the existing 26-inch-diameter pipeline where it passes under Route 9 in Peekskill and Cortlandt, New York. The new pipeline and workspace would be offset about 20 feet north of the existing 26-inch-diameter pipeline between MPs 5.7 and 5.9. We believe the proposed offset, which would allow the existing pipeline under the roadway to be abandoned in-place, avoiding the roadway impacts that would result if the existing pipeline were removed, is preferable and concur with Algonquin's proposal to incorporate it into the proposed route.	Yes
6.6	Cortlandt, NY	Workspace adjustment	Algonquin proposes to reduce the proposed construction workspace on the north side of the existing right-of-way at MP 6.6 in Cortlandt, New York to minimize impact on a residence. In order to facilitate equipment access to the revised construction area, Algonquin proposes to add an additional 0.22 acre of ATWS, comprising 0.16 acre of forest land and 0.06 acre of residential land, on the south side of the existing right-of-way opposite the residence. Because the proposed workspace adjustments were made to minimize residential impacts, we believe Algonquin's proposed changes are justified and concur with Algonquin's proposal to incorporate them into the proposed Project design.	Yes
8.1	Cortlandt, NY	Workspace addition	Algonquin proposes to add an additional 0.22 acre of ATWS on the south side of the existing right-of-way at MP 8.1 in Cortlandt, New York to provide access from a temporary access road to the construction right-of-way, and to provide additional area for construction crew parking, and to maintain access to a parking area associated with a residence/home business adjacent to the work area. The ATWS would result in an additional 0.22 acre of impact comprising 0.05 acre of forest land and 0.17 acre of industrial land. We believe Algonquin's proposed use of the additional workspace is justified and concur with Algonquin's proposal to incorporate it into the proposed Project design.	Yes

TABLE 3.5.3-1 (cont'd)

**Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After Issuance of the Draft EIS**

Segment/ Milepost(s)	Municipality, State	Type of Modification	Description and Evaluation	Incorporated Into Project Design
10.4	Cortlandt, NY	Workspace addition	Algonquin proposes to add an additional 0.15 acre of ATWS along the northern edge of the previously proposed depicted workspace at MP 10.43 in Cortlandt, New York to provide space to safely dismantle an existing deck structure associated with the Cortlandt Farm Market. According to Algonquin, this deck is in poor condition and is a safety hazard. Algonquin plans to replace the deck structure after the pipeline installation is complete. All of the land that would be affected by the ATWS is industrial land consisting of a parking lot. Because the proposed additional workspace would be used to facilitate safe construction of the pipeline, we believe is justified and concur with Algonquin's proposal to incorporate it into the proposed Project design.	Yes
<b>Southeast to MLV 19 Take-up and Relay</b>				
2.1	Danbury, CT	Relocating HDD entry/exit point	The USACE asked that consideration be given to relocating the HDD entry/exit point near MP 2.1 further to the east (in an upland area) to avoid and minimize wetland impact from temporary workspace (B13-SELR-W10). The potential to relocate the HDD entry point to the east was considered but determined that the upland area to the east is on a hill and use of this area would not accommodate the HDD drill rig and other equipment without significant cut and fill activities. The proposed entry location is in a wetland but the area is flat and would be restored following installation of the pipeline. For these reasons we do not believe moving the HDD entry location to the nearby upland area to the east would be preferable to the proposed location.	No
2.7	Danbury, CT	Workspace addition	At the request of the USACE and CTDEEP, Algonquin proposes to reduce the workspace at about MP 2.7 to avoid a vernal pool. Specifically, Algonquin proposes to reduce the temporary construction workspace consisting of forest land by about 0.025 acre. We concur with the rationale for this workspace adjustment and find it acceptable for inclusion into the proposed Project design.	Yes
<b>Line 36-A Loop Extension</b>				
0.8 to 0.9	Cromwell, CT	Pipeline shift and workspace adjustment	As a result of site visits with the USACE, Algonquin is proposing a pipeline and workspace shift between MPs 0.8 and 0.9 to minimize direct workspace impacts on the main channel of Dividend Brook in Cromwell, Connecticut. The previously proposed workspace was adjacent and parallel to the southern bank of Dividend Brook. This workspace would be relocated about 60 feet to the south to eliminate in-stream construction and workspace impact on Dividend Brook. The proposed modification would increase slightly the amount of construction workspace and temporary wetland impacts (mostly within the existing right-of-way) by 0.13 and 0.14 acre, respectively; however, it would completely avoid direct in-stream impacts on the main channel of Dividend Brook. Because of these advantages, we believe it would be preferable to the previously proposed route and workspace, and, therefore, we concur with Algonquin's proposal to incorporate this route and workspace adjustment into the proposed route and Project design.	Yes
1.3 to 1.4	Cromwell, CT	Pipeline shift and workspace adjustment	The USACE suggested that the route parallel with Dividend Brook (B13-CLR-S4) be relocated either south of the 30-inch-diameter pipeline or along the north side of Meadow Road. As a result of site visits with the USACE and in response to a landowner request, Algonquin is proposing a pipeline shift and	Yes

TABLE 3.5.3-1 (cont'd)

**Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After Issuance of the Draft EIS**

Segment/ Milepost(s)	Municipality, State	Type of Modification	Description and Evaluation	Incorporated Into Project Design
			workspace adjustment between MPs 1.3 and 1.4 to avoid multiple crossings of Dividend Brook in Cromwell, Connecticut. The proposed pipeline and corresponding workspace adjustment would relocate the pipeline about 60 feet to the south of its previously proposed location. This shift would eliminate four separate crossings of Dividend Brook and the associated in-stream construction and workspace impacts that would result from these crossings. The pipeline shift and corresponding workspace adjustment would also minimize impact on a residence located north of Dividend Brook. The proposed modifications would increase the overall workspace needed by 0.5 acre and the temporary wetland impacts (mostly within the existing right-of-way) by 0.35 acre, but these effects would be more than offset by the reduction in impacts on Dividend Brook. For these reasons, we believe the proposed pipeline shift and workspace adjustment would be preferable to the previously proposed alignment and concur with Algonquin's proposal to incorporate this pipeline shift and workspace adjustment into the proposed route and Project design.	
<b>E-1 System Lateral Take-up and Relay</b>				
2.0 to 3.3	Lebanon, CT	Pipeline shift	The USACE suggested that the pipeline route between MPs 2.0 and 3.3 be rerouted to the south of Susquetonscut Brook to minimize wetland and waterway impacts and avoid two crossings of tributaries to Susquetonscut Brook (A13-ELR-W2 A13-ELR-W6, VP6, VP6A, A13-ELR-W7, VP7, and A13-ELR-W8). Algonquin does not propose to implement a variation that would avoid wetland A13-ELR-W2. However, as discussed below, Algonquin is proposing a workspace adjustment between MPs 2.7 and 2.8 to minimize direct impacts on the main channel of Susquetonscut Brook.	No
2.7 to 2.8	Lebanon, CT	Workspace adjustment	As a result of site visits with the USACE, Algonquin is proposing a workspace adjustment between MPs 2.7 and 2.8 to minimize direct impacts on the main channel of Susquetonscut Brook in Lebanon, Connecticut. The previously proposed workspace was located within and adjacent to the southern bank of Susquetonscut Brook. Algonquin plans to reduce the width of the workspace north of the proposed alignment from 50 to 25 feet to eliminate direct workspace impact on Susquetonscut Brook. To offset for the loss of the workspace on the north side, Algonquin would expand the workspace on the south side of the right-of-way by an equal amount (i.e., from 25 to 50 feet). Algonquin also proposes to utilize an additional 25- by 200-foot ATWS that would be located in an upland area to facilitate construction through an adjacent wetland (i.e., wetland A13-ELR-W6). The proposed adjustments would increase the total amount of workspace required by 0.1 acre, but would avoid impacts on Susquetonscut Brook, reduce the clearing of forest land, and decrease the impact on wetlands by 0.1 acre and forested wetlands by 0.3 acre. For these reasons, we believe the proposed workspace adjustments would be preferable to the previously proposed workspaces and concur with Algonquin's proposal to incorporate these adjustments into the proposed Project design.	Yes
4.0 to 4.3	Franklin, CT	Pipeline shift	The USACE indicated that there appears to be an opportunity to avoid and minimize impact on the wetland system between MPs 4.0 and 4.3 by relocating the pipeline route to the south (B13-ELR-W16). Any deviation to the south would reduce wetland impact, but would create a new right-of-way corridor	No



TABLE 3.5.3-1 (cont'd)

**Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After Issuance of the Draft EIS**

Segment/ Milepost(s)	Municipality, State	Type of Modification	Description and Evaluation	Incorporated Into Project Design
6.7	Franklin, CT	Eliminating access road	and would increase the area of disturbance and forest clearing. Additionally, the area to the south of the proposed route is side-sloped and would require substantial cut and fill and blasting to create a level work surface to install the pipeline. This would further increase the area of impact and the challenge to restoring the right-of-way. For these reasons, we believe the proposed route would be preferable in this area.  The USACE suggested that either TAR 6.7 be eliminated or relocated to avoid a vernal pool. The area encompassing the road is currently under development as a golf course and residential community and the area where the access road would be located is already cleared. As a result, no tree clearing or only minor grading would be required for its use. Additionally, Algonquin would implement erosion controls to ensure the vernal pool is not impacted. For these reasons, we believe the use of the proposed TAR is appropriate.	No
6.9	Franklin, CT	Workspace adjustment	At the request of the USACE, Algonquin is proposing to reduce the workspace at MP 6.9 to avoid a wetland (i.e., wetland A13-ELR-W13) that contains an identified vernal pool. Algonquin would reduce the size of temporary construction workspace, which is forested, by about 0.03 acre. Because the workspace adjustment would avoid a wetland, we believe that it would be preferable to the previously proposed workspace, and concur with Algonquin's incorporation of it into the proposed Project design.	Yes
7.1	Franklin, CT	Workspace adjustment	At the request of the USACE, Algonquin is proposing to reduce the previously proposed temporary workspace at MP 7.1 to avoid a wetland (i.e., wetland B13-ELR-W23). Algonquin proposes to reduce the size of the temporary construction workspace, which is forested, by about 0.02 acre. Because the workspace adjustment would avoid a wetland, we believe that it would be preferable to the previously proposed workspace, and concur with Algonquin's incorporation of it into the proposed Project design.	Yes
8.5 to 8.6	Norwich, CT	Pipeline shift	Algonquin proposes to shift the pipeline alignment between MPs 8.5 and 8.6 in Norwich Connecticut near two large box culverts on Wisconsin Avenue. These culverts, which occupy about a 7-square-foot area, were installed as part of a road improvement project to route Elisha Brook under the improved roadway. Algonquin's existing 10-inch-diameter pipeline is to the south and avoids the culverts. Algonquin has determined that there is adequate space between the openings of the culverts and the existing pipeline to install and operate the proposed 16-inch-diameter pipe. This route adjustment would increase slightly the amount of temporary workspace required (by 0.08 acre) and the forest land and open land impacts by 0.02 acre and 0.06 acre respectively, but would minimize disturbance to the stream bed and provide a suitable location for the equipment to execute a dam-and-pump dry crossing technique. We believe the proposed route adjustment would be preferable to the previously proposed route, and concur with Algonquin's incorporation of it into the proposed route.	Yes

TABLE 3.5.3-1 (cont'd)

**Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After Issuance of the Draft EIS**

Segment/ Milepost(s)	Municipality, State	Type of Modification	Description and Evaluation	Incorporated Into Project Design
<b>West Roxbury Lateral</b>				
0.0 to 4.2	Westwood, Dedham, West Roxbury, MA	Permanent right-of-way width reduction; 50 to 30 feet	Along the West Roxbury Lateral route, the majority of the pipeline would be constructed within roadways by permit and, thus, would not require any permanent easement for operations of the pipeline. In the remaining locations, Algonquin would acquire permanent easement rights from the property owners. As previously proposed, Algonquin reflected a 50-foot-wide permanent easement on its filed alignment sheets. For the proposed 16-inch-diameter pipeline, Algonquin has determined that it would only seek to acquire a 30-foot-wide permanent easement. This change would reduce the amount of permanent right-of-way required for the Project, which we believe would be preferable and, therefore, we agree with its incorporation into the proposed Project design.	Yes
0.3 to 0.4	Westwood, MA	Pipeline shift	During survey activities on the Meditech property in Westwood, Algonquin identified the presence of a drainage outfall between MPs 0.3 and 0.4. To avoid this outfall, Algonquin is proposing to shift the centerline of the pipeline about 10 feet to the south of the previously proposed pipeline alignment. Algonquin is not proposing any change to the construction workspace limits, just the location of the pipeline. Because this pipeline shift avoids existing underground utilities and there are no changes in the environmental impacts as a result of this shift, we concur with Algonquin's proposal to incorporate this pipeline shift into the proposed West Roxbury Lateral pipeline route.	Yes
1.1	Dedham, MA	Workspace addition	To facilitate access for emergency vehicles during construction as may be necessary, Algonquin proposes to use 0.04 acre of ATWS on the Fox TV property at MP 1.1 in Dedham. This ATWS would be located adjacent to Fox Drive within an existing parking lot, which is an industrial/commercial land use area. We concur with the rationale for this ATWS and find it acceptable for inclusion into the proposed Project design.	Yes
1.1 to 2.4	Dedham, MA	Pipeline shift in Providence Highway	Algonquin identified the MassDOT pipeline shift to address potential traffic impacts, minimize utility crossings, and eliminate direct impacts on the driveways along Providence Highway, which include two entrances off of Providence Highway into Legacy Place, and support a number of businesses. Shifting the pipeline location along Providence Highway, would also enable Algonquin to reduce the amount of temporary construction workspace required by about 2.5 acres. By staying entirely within Providence Highway, the pipeline shift would also enable Algonquin to eliminate the section of the previously proposed route and construction workspace that extended away from Providence Highway at MP 1.4 and crossed Legacy Boulevard and McNeil Way. To further reduce impacts, Algonquin would complete the installation of the pipeline within Providence Highway at night between 9:00 p.m. and 5:00 a.m. According to Algonquin, the District Director for MassDOT District 6 and his senior staff preferred the proposed pipeline shift because it would lessen the overall impact on traffic flow along Providence Highway while also minimizing utility crossings. Algonquin says that both Legacy Place and National Amusements have also acknowledged that the proposed shift in alignment would be preferable to the previously proposed route because it reduces the potential impacts on Legacy Place. Based on the	Yes

TABLE 3.5.3-1 (cont'd)

**Minor Pipeline Shifts, Workspace Adjustments, and Design Modifications Evaluated After Issuance of the Draft EIS**

Segment/ Milepost(s)	Municipality, State	Type of Modification	Description and Evaluation	Incorporated Into Project Design
2.6	Dedham, MA	Workspace addition	<p>advantages of minimizing impacts on access to Legacy Place, we agree that the MassDOT Pipeline Shift would be preferable and should be incorporated into the proposed West Roxbury Lateral pipeline route.</p> <p>To facilitate staging of equipment and materials needed for construction of the West Roxbury Lateral, Algonquin proposes to add 0.5 acre of additional temporary workspace on private property at MP 2.6 in Dedham. This additional workspace would be located at the intersection of East Street and High Street. The property, which could be classified as industrial/commercial land, is current vacant and does not contain any structures. We concur with the rationale for this ATWS and find it acceptable for inclusion into the proposed Project design.</p>	Yes
4.1 to 4.3	West Roxbury, MA	Pipeline shift in Grove Street	<p>During survey activities along Grove Street in West Roxbury, Algonquin identified the presence of a combined sewer line between MPs 4.1 and 4.3. To avoid this feature, Algonquin is proposing to shift the centerline of the pipeline about 5 feet to the north of the previously proposed pipeline alignment. Algonquin is not proposing any change to the construction workspace limits, just the location of the pipeline. Because this pipeline shift avoids existing underground combined sewer line and there are no changes in the environmental impacts as a result of this shift, we concur with Algonquin's proposal to incorporate this pipeline shift into the proposed West Roxbury Lateral pipeline route.</p>	Yes
4.4 to 5.0	West Roxbury, MA	Pipeline shift in Centre Street	<p>As a result of further consultation with National Grid, Algonquin has also agreed to shift the pipeline alignment within Centre Street from the intersection of Grove and Centre Streets to the vicinity of the relocated interconnection point with National Grid in order to minimize further the overall impacts on Centre Street. Currently, National Grid is installing a new 12-inch-diameter plastic pipeline within Centre Street in West Roxbury between about MPs 4.4 and 5.0. When this work is completed over the next several weeks, National Grid would abandon its existing 6-inch-diameter cast iron pipeline in place. As a result, National Grid would have two abandoned pipelines in Centre Street, a 6-inch-diameter cast iron pipeline and a 12-inch-diameter steel pipeline. Algonquin has coordinated with National Grid and has agreed to install the proposed 24-inch-diameter pipeline in the location of the abandoned 12-inch-diameter steel pipeline, thereby utilizing the same trench. By utilizing that existing trench, Algonquin would have greater certainty concerning its ability to avoid existing utilities and thereby minimize the overall construction-related impacts on Centre Street. No change in the filed construction workspace is required to accommodate this pipeline alignment shift. Because of the advantages of this pipeline shift, we agree with its incorporation into the proposed West Roxbury Lateral pipeline route.</p>	Yes

As discussed in other sections of the EIS, Algonquin has prepared an HDD Contingency Plan that identifies steps to be taken to minimize impacts if there is an inadvertent return of drilling fluid in or near the river. If such an inadvertent return were to occur, the impacts would still be less than an open-cut crossing. If for some reason the HDD effort should fail at the proposed location, Algonquin would be required to identify a new location for the crossing or new methodology, and request approval for the new location or methodology with all applicable agencies.

#### **3.5.4.2 Susquetonscut Brook**

In its comments on the draft EIS, the USACE indicated that impacts on the Susquetonscut Brook (B13-ELR-S5B) at MP 5.8 on the E-1 System Lateral Take-up and Relay could be avoided by conducting HDD installation at this location. Algonquin is currently conducting geotechnical surveys to determine the feasibility of an HDD across the brook and New England Central Railroad. We have concluded that the current proposed dry crossing method would not result in any significant impacts (see the analysis in sections 4.3.2 and 4.6.2). However, if an HDD proves feasible, impacts on the waterbody would be further reduced. Upon completion of the geotechnical surveys, and if they demonstrate that an HDD is feasible, Algonquin would be required to request approval for the new methodology with all applicable agencies.

#### **3.5.4.3 Mother Brook**

In its comments on the draft EIS, the USACE requested that Algonquin consider the feasibility of completing the crossing of Mother Brook (B13-WRL-S3) at MP 3.1 on the West Roxbury Lateral using the HDD method. As discussed in more detail above, Algonquin has determined that there is sufficient space above the box culvert that conveys Mother Brook under Washington Street to install the pipeline above the box culvert. Algonquin has proposed a variation that would relocate the pipeline crossing to this area and would avoid any disturbance to the brook (see section 3.5.2.2).

#### **3.5.4.4 Falls Brook**

In its comments on the draft EIS, the USACE requested that Algonquin evaluate the use of the HDD method to avoid impacts on Falls Brook around MP 0.8 on the E-1 System Lateral Loop Extension. Algonquin evaluated the potential to use the HDD crossing method to cross Falls Brook and determined it would be technically feasible. However, Algonquin does not believe that an HDD is warranted because the proposed dam-and-pump method (which is a dry crossing method) would have minimal impact on the brook. Using the dam-and-pump method, Algonquin estimates it can complete the crossing in 24 to 48 hours. In contrast, an HDD crossing would take 2 to 3 months and would require an equipment move-around, which would prolong construction and delay the restoration of the right-of-way. The USACE agrees that an HDD crossing is not warranted and that the proposed dam-and-pump method would have minimal impact on the brook. We also agree.

#### **3.5.4.5 Wetland B13-CLR-W2**

The USACE commented that an HDD appears feasible in the area of wetland B13-CLR-W2 between about MPs 0.7 and 0.9 of the Line-36A Loop Extension to avoid new wetland impacts. Alternatively, wetland impacts could be avoided or reduced by adopting a new route to the south of the existing 30-inch-diameter pipeline. Algonquin determined that an HDD would be technically feasible in this area but has concerns about the potential for inadvertent returns of drilling fluids to impact nearby water wells and, given the nature of the impact on the wetland and Algonquin's plan to mitigate the impacts through implementation of its E&SCP, Algonquin does not believe an HDD is warranted. However, as discussed in section 3.5.3, Algonquin is proposing to shift the pipeline alignment and workspace about 60 feet to the south between MPs 0.8 and 0.9, which would eliminate in-stream construction and workspace impacts on Dividend Brook. The USACE agrees that this would sufficiently minimize impacts and we also agree.

### **3.6 ABOVEGROUND FACILITY SITE ALTERNATIVES**

#### **3.6.1 Compressor and M&R Station Modifications**

Algonquin proposes to modify six existing compressor stations and 24 existing M&R stations along its mainline system in New York, Connecticut, Rhode Island, and Massachusetts. The modifications at the compressor stations would occur within the existing sites; the modifications at the meter stations would occur within or directly adjacent to the existing sites. Because the proposed modifications would occur at existing facilities along Algonquin's mainline system, no alternative sites were identified or evaluated. See section 3.4 above for discussions regarding facility design and siting considerations for the Project.

#### **3.6.2 New M&R Stations**

Algonquin proposes to construct three new M&R stations as part of the Project, one in Connecticut and two in Massachusetts. Information on site alternatives for each of these facilities is provided below.

##### **3.6.2.1 Oakland Heights M&R Station**

Algonquin proposes to construct the Oakland Heights M&R facility in the City of Norwich, New London County, Connecticut to deliver natural gas to NPU. The proposed station site is located adjacent to Algonquin's existing E-3 Lateral System along Oakland Heights Road (see figure 3.6.2-1). The site would allow NPU to provide natural gas service to an adjacent trailer park community currently serviced by propane, and provide an alternate feed to its distribution system in the area. The proximity of the site to Algonquin's existing lateral and the trailer park community would minimize the required length of the interconnecting pipeline needed by NPU to provide new delivery service to the trailer park community. Algonquin would maintain a 50-foot-wide forested buffer between the proposed facility and the trailer park as a visual screen from nearby houses. No impacts on wetlands would result from construction at the proposed site.

We evaluated two alternative sites (A and B) upstream of the proposed site for the Oakland Heights M&R Station (see figure 3.6.2-1). Alternative sites downstream of the proposed site were not considered because of flow dynamics on the system: a new site downstream of the trailer park community would require an upgrade of the existing E-3 Lateral from 4-inch-diameter to 12-inch-diameter pipeline to maintain the required pressure profile on the lateral.

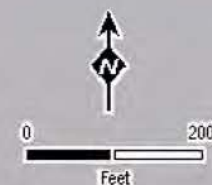
Alternative Site A is located in a wooded lot just south of Algonquin's existing E-3 Lateral and about 0.2 mile west of the proposed station site. The primary advantage of this site, like the proposed site, is its proximity to the existing E-3 Lateral. However, this site would require longer interconnecting pipeline to provide delivery service to the trailer park community. The interconnecting pipeline would need to cross the existing E-3 Lateral as well as a steep draw and a forested wetland.

Alternative Site B is located in a wooded lot north of the existing E-3 Lateral and west of the trailer park community, about 0.1 mile west of the proposed station site. The primary advantage of Alternative Site B is its proximity to both the existing lateral and the trailer park community, which would limit the length of the required interconnecting pipeline. The primary disadvantage is that the site is located on a steep slope adjacent to a waterbody and nearby wetlands.

Based on the above discussion, the proposed site is strategically situated to interconnect with NPU's system for delivery service to the trailer park community. Use of the proposed site would avoid impacts on wetlands and eliminate the need to construct across or within steep terrain. Moreover, we note that Algonquin has stated that representatives of the City of Norwich are opposed to the alternative locations. For all these reasons, the alternative sites would not be preferable to or provide a significant environmental advantage over the proposed site.



- Legend**
- |   |   |
|---|---|
| <span style="border: 1px solid green; display: inline-block; width: 20px; height: 10px;"></span> Proposed Meter Station Construction Area | <span style="border-bottom: 2px solid blue; width: 20px;"></span> Stream (CT DEEP)                              |
| <span style="border-bottom: 1px dashed white; width: 20px;"></span> Existing Algonquin Natural Gas Pipelines                              | <span style="background-color: magenta; display: inline-block; width: 20px; height: 10px;"></span> NNI Wetlands |
| Alternative Meter Station Construction Areas  |   |
| <span style="border: 2px solid red; display: inline-block; width: 20px; height: 10px;"></span> Alternate A                                |   |
| <span style="border: 2px solid cyan; display: inline-block; width: 20px; height: 10px;"></span> Alternate B                               |   |



Sources: BING, ESRI, SPECTRA,  
CT GIS, CT DEEP, NNI, USGS  
Projection: NAD83, UTM Zone 18N  
US Survey Feet, Grid North

**Figure 3.6.2-1**  
**AIM Project**  
Oakland Heights  
Meter Station  
Alternative Sites



### **3.6.2.2 Assonet M&R Station**

Algonquin proposes to construct the new Assonet M&R Station in the Town of Freetown, Bristol County, Massachusetts to deliver natural gas to NSTAR. The new M&R facility would be built adjacent to Algonquin's existing North Fall River M&R Station, west of South Main Street in Freetown. NSTAR is currently supplied natural gas from the North Fall River M&R Station pursuant to an agreement with Fall River. However, NSTAR now has enough gas deliveries in its service area to warrant a new gate station directly with Algonquin. NSTAR requested that the new meter station be sited as close as possible to the North Fall River M&R Station to minimize the amount of new distribution pipeline that would need to be installed.

Algonquin sited the proposed M&R facility adjacent to an existing aboveground facility as well as NSTAR's existing distribution system. The proposed site for the new meter station is located in an existing Algonquin easement that has been modified to include the new facility. No significant environmental features, such as wetlands or waterbodies, would be affected by construction at the proposed site. As a result, we have not identified any specific alternative sites for the proposed facility.

The proposed Assonet M&R Station has been strategically sited to leverage existing transmission and distribution systems and minimize impacts on the environment. Any alternative site along or in the vicinity of Algonquin's system in Bristol County, Massachusetts would require construction of aboveground facilities away from existing, aboveground, pipeline infrastructure. An alternative site additionally would require construction of a longer distribution pipeline by NSTAR, which would result in greater environmental impact than the proposed action.

### **3.6.2.3 West Roxbury M&R Station**

Algonquin proposes to construct the West Roxbury M&R Station at MP 4.2 of the proposed West Roxbury Lateral pipeline to deliver natural gas to Boston Gas (see figure 3.6.2-1). The proposed site for the new facility is located at the intersection of Centre Street and Grove Street on an undeveloped, partially forested tract adjacent to an active quarry operation. No wetlands, waterbodies, or businesses would be affected by construction of the M&R facility at this site.

Numerous commentors requested evaluation of an alternative site for the West Roxbury M&R station due to concerns about blasting impacts and general safety impacts with the proposed location. We evaluated a potential alternative site for the M&R Station at the point where the West Roxbury Lateral Alternative Route intersects the proposed route (i.e., at about MP 5.0 of the proposed route). The alternative site is located on residential land at the intersection of Centre Street and Alaric Street. Use of the site would require the purchase and demolition of an existing residence to provide sufficient space for the M&R facility. Construction at this site would also result in significant traffic impacts along Centre and Alaric Streets due to the limited space available for construction. Further, Algonquin provided an engineering analysis by a third-party geotechnical consultant that evaluated the potential impacts of blasting in the quarry on the West Roxbury Lateral and West Roxbury M&R Station (see more description of the analysis in section 4.1.4 of the EIS). This evaluation concluded that ground vibrations from blasting at the quarry would not be disruptive or damaging to the M&R station or the pipeline. We agree with the findings of this evaluation. For these reasons, we do not consider the alternative site technically feasible or environmental preferable to the proposed site. No other viable alternative sites were identified for the proposed West Roxbury M&R Station.





## **4.0 ENVIRONMENTAL ANALYSIS**

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The environmental consequences of constructing and operating the proposed AIM Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short term, long term, and permanent. Temporary impacts generally occur during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impacts could continue for up to 3 years following construction. Impacts were considered long term if the resource would require more than 3 years to recover. A permanent impact could occur as a result of any activity that modified a resource to the extent that it would not return to preconstruction conditions during the life of the project, such as the construction of an aboveground facility. We considered an impact to be significant if it would result in a substantial adverse change in the physical environment.

In this section, we discuss the affected environment, general construction and operational impact, and proposed mitigation for each resource. Algonquin, as part of its proposal, agreed to implement certain measures to reduce impacts. We evaluated Algonquin's proposed mitigation measures to determine whether additional measures are necessary to reduce impacts. These additional measures appear as bulleted, boldfaced paragraphs in the text. We will recommend that these measures be included as specific conditions to any authorization that the Commission may issue Algonquin.

Conclusions in this EIS are based on our analysis of the environmental impacts and the following assumptions:

- Algonquin would comply with all laws and regulations;
- the proposed facilities would be constructed as described in section 2.0 of this document; and
- Algonquin would implement the mitigation measures included in its application and supplemental filings to FERC.

### **4.1 GEOLOGY**

#### **4.1.1 Geologic Setting**

The proposed Project is located in the New England Upland and Seaboard Lowland sections of the New England physiographic province. Pipeline and aboveground facilities in New York and Connecticut, as well as the Burrillville Compressor Station in Rhode Island, would be located in the New England Upland section, which is characterized by rolling hills with streams located in rounded and well-graded valleys. Relief ranges from 100 to 1,000 feet in the more mountainous regions, including the Ramapo Mountains in New York, and the Bolton and Mohegan ranges in Connecticut (USGS, 1999).

The Haverstraw to Stony Point Take-up and Relay segment begins in the Ramapo Mountains of southeastern New York State in the Mahwah River Valley. The pipeline route starts along gentle slopes and continues to traverse along hills of moderate relief (less than 200 feet) and moderate slope. Elevations along this pipeline segment range from approximately 200 feet above mean sea level (msl) near Cedar Pond Brook to about 660 feet above msl on a hill near Rider Hill.

From Algonquin's existing Stony Point Compressor Station, the Stony Point to Yorktown Take-up and Relay segment extends about 12.3 miles to the Town of Yorktown, traversing areas of moderate to steep relief. The pipeline segment crosses Bensons Point and Buckberg Mountain (about 450 feet of relief) before descending to the western shore of the Hudson River. After crossing the Hudson River, the

pipeline segment continues eastward along gentle to moderate slopes, passing the Peekskill M&R Station and the Cortlandt M&R Station. Elevations across the segment range from sea level at the Hudson River to about 700 feet above msl on Buckberg Mountain.

From Algonquin's existing Southeast Compressor Station, the Southeast to MLV 19 Take-up and Relay segment traverses rolling hills with moderate slope. The pipeline segment continues along gentle slopes in the area of West Danbury, Connecticut and steep slopes on the east side of Interstate 84. The pipeline segment then crosses gentle to moderate slopes on the north side of a series of drumlins with moderate to steep slopes. Elevations across the segment range from about 300 feet above msl near Interstate 84 to about 720 feet above msl east of Sawmill Road.

The E-1 System Lateral Take-up and Relay segment starts by crossing Owunnegunset Hill over moderate to steep slopes. The pipeline segment continues across moderate to gentle side slopes along Susquetonscut Brook before crossing moderate to steep slopes over Meeting House Hill and Misery Hill (about 300 feet of relief). It then rises about 350 feet up Turkey Hill and traverses moderate slopes before reaching its terminus. Elevations across the segment range from about 220 feet above msl at the Central Vermont Railroad crossing to about 550 feet above msl on Owunnegunset Hill.

The Line 36-A Loop Extension segment crosses about 2.0 miles of flat to gently sloping land west of the Connecticut River. Elevations range from about 20 feet above msl at the Connecticut River to approximately 150 feet above msl near the existing Cromwell Compressor Station.

The E-1 System Lateral Loop segment begins at Algonquin's existing Montville M&R Station in a flat area on the southwestern side of Stony Brook. The pipeline segment crosses moderately sloping terrain with a steeper section on the south side of Cochegan Hill. Elevations along this segment range from about 20 feet above msl near the existing Montville M&R Station to about 320 feet above msl on top of Cochegan Hill.

The proposed facilities in Massachusetts would be located in the Seaboard Lowland section of the New England province. The section is lower in elevation and typically less hilly than the New England Upland section and has many small rivers and streams flowing along a land surface that slopes towards the ocean. The area was inundated by the ocean and large proglacial lakes during the last glacial retreat. Local relief is typically less than 200 feet in most places within this section (USGS, 1999). The West Roxbury Lateral traverses gently sloping land in a highly developed area along existing roadways. Elevations along this segment range between about 15 to 45 feet above msl.

Algonquin's existing and new aboveground facilities are primarily located in areas with gentle to moderate slopes. Exceptions to this type of topography include:

- Bensons Point near the Stony Point Compressor Station and M&R Station;
- drumlins near the Southeast Compressor Station and West Danbury M&R Station;
- Woodruff Hill near the Oxford Compressor Station;
- a hill near Hope River at the Chaplin Compressor Station; and
- hills near the Oakland Heights, Southbury, and Middletown M&R Stations.

Construction and operation of the Project facilities would not materially alter existing geologic conditions in the area. In addition, the overall effect of the Project on topography would be minor. The primary effects would be limited to construction activities and would include temporary disturbance to slopes within the right-of-way resulting from grading and trenching operations. Algonquin would minimize the impacts by returning contours to preconstruction conditions to the maximum extent practicable. This may not be the case at the aboveground facilities, where grading and filling may be required to create a safe and stable land surface to support the facility.

#### **4.1.2 Surficial Geology**

The landscape in the area of the proposed Project consists primarily of glacial till with intermittent bedrock outcrops, sand and gravel deposits, and fine-grained lacustrine and swamp sediment deposits. A review of surficial geology maps provided information regarding the nature of deposits expected in the Project area. Table 4.1.2-1 summarizes surficial geology in the vicinity of the proposed pipeline facilities.

The aboveground facilities in New York and Rhode Island are all located on till. The aboveground facilities in Connecticut are located on a variety of surficial geologic surfaces including till, sand and gravel, sand, and alluvium. The aboveground facilities in Massachusetts are located on a variety of surficial geologic surfaces including till or bedrock, sand and gravel, fine-grained deposits, and coarse glacial stratified deposits.

The overall effect of the Project on surface geology would be minor. The effects would mostly be limited to construction activities and would include temporary disturbance to surficial deposits within the right-of-way resulting from grading and trenching operations. Algonquin would minimize the impacts on surface geology by returning contours to preconstruction conditions to the maximum extent practicable immediately after construction. This may not be the case at the aboveground facilities, where grading and filling may be required to create a safe and stable land surface to support the facility.

#### **4.1.3 Bedrock Geology**

Bedrock geology of the AIM Project area is dominated by igneous and metamorphic rocks with limited amounts of carbonate rock. A review of bedrock geology maps provided information regarding the nature of units expected in the Project area. Tables L-1 and L-2 in appendix L summarize bedrock geology in the vicinity of the proposed pipeline and aboveground facilities, respectively.

The effect on bedrock geology would be minor. The primary effects would be associated with areas of shallow bedrock where rock would need to be removed during the construction of pipeline facilities. See section 4.1.6 for more information on areas of shallow bedrock and mitigation measures that would be taken during rock removal.

#### **4.1.4 Mineral Resources**

Mineral resources in the Project area consist mainly of commercial sand and gravel, crushed stone, and a gypsum quarry. Sands and gravels are commercially extracted from widely distributed glacial outwash deposits at locations in the general area of the Project. Upon review of the USGS topographic maps and recent aerial photography, three extraction facilities were found to be located in close proximity to the Project as described below.

An unnamed sand and gravel operation is located less than 20 feet from the E-1 System Lateral Take-up and Relay right-of-way in Lebanon, Connecticut at MP 3.1 (USGS, 2013b). This portion of the Project is being constructed within the existing right-of-way, which already precludes the expansion of the sand and gravel operation in direction of the proposed pipeline. As a result, the Project would not affect operations nor would operations impact the Project.

TABLE 4.1.2-1		
Surficial Geology of the Pipeline Facilities for the AIM Project		
Facility/Surficial Geology	Length (miles)	Description
<b>Replacement Pipeline</b>		
Haverstraw to Stony Point Take-up and Relay		
Till	3.3	A variable texture, usually poorly sorted diamict deposited beneath glacier ice. It tends to be impermeable, have variable clast content, and range in thickness from 3 to 165 feet.
Stony Point to Yorktown Take-up and Relay		
Till	7.7	See description above.
Bedrock	2.1	Bedrock is at the surface or generally within 1 meter of the surface.
Lacustrine sand	1.0	Well sorted/stratified quartz sand deposits attributed to deposition in nearshore environments in large bodies of water.
Outwash sand and gravel deposits	0.8	Well rounded, stratified, coarse to fine gravel with sand of proglacial fluvial deposition. Finer texture indicates increased distance from ice border. Thickness of the deposit varies from 7 to 66 feet.
Water	0.7	Water
Southeast to MLV 19 Take-up and Relay		
Till	3.7	See description above.
Thick Till	0.4	Areas where till is greater than 10 to 15 feet thick and includes drumlins where till thickness is typically greater than 100 feet.
Sand and Gravel	0.3	Material composed of mixture of sand and gravel within individual layers and as alternating well to poorly sorted layers. Typical ranges are 25 to 50 percent gravel particles and 50 to 75 percent sand particles.
Swamp	0.1	Deposits of peat and muck that may contain minor amounts of silt, sand, and clay. Deposits are typically less than 10 feet thick. Often underlain by glacial till.
E-1 System Lateral Take-up and Relay		
Till	6.3	See description above.
Sand and Gravel	1.3	See description above.
Swamp	0.3	See description above.
Sand	0.8	Material composed primarily of very coarse to fine sand, typically in well-sorted layers. Coarse layers may contain a maximum of 25 percent gravel particles. Fine layers may contain very fine sand, silt, and clay particles.
Thick till	0.4	See description above.
Alluvium overlying sand and gravel deposits	<0.1	Alluvium (sand, gravel, silt, and some organic material found on the floodplains of modern streams) overlying undifferentiated coarse deposits.
<b>Loop Extension</b>		
Line-36A Loop		
Sand overlying fines	1.5	Stacked coarse deposit overlying fine deposit where sand is of variable thickness and overlies thinly bedded fines of variable thickness.
Sand and gravel overlying sand and overlying fines	0.5	Deposits where sand and gravel is typically less than 20 feet thick, horizontally bedded and overlies thicker inclined beds of sand that, in turn, overlie thinly bedded fines of variable thickness.
E-1 System Lateral Loop		
Till	1.3	See description above.

TABLE 4.1.2-1 (cont'd)		
Surficial Geology of the Pipeline Facilities for the AIM Project		
State/Facility/Geologic Unit	Length (miles)	Description
<b>New Pipeline</b>		
West Roxbury Lateral		
Sand and gravel deposits	3.3	Material composed of a mixture of sand and gravel within individual layers and as alternating well to poorly sorted layers. Typical ranges are 25 to 50 percent gravel particles and 50 to 75 percent sand particles.
Floodplain alluvium deposits	0.2	Well sorted to poorly sorted stratified sand, gravel, silt, and some organic material located beneath floodplains of modern streams.
Till or Bedrock	1.4	See descriptions above.
Sources: Cadwell, 1989; CTECO, 2010; CTDEEP, 2009a, 2009b, 2009c; RIGIS, 1998; Massachusetts Office of Geographic Information Systems, 1999		

The West Roxbury Crushed Stone Quarry is located adjacent to the West Roxbury Lateral along Grove Street from MPs 4.2 to 4.4 and adjacent to the proposed West Roxbury M&R Station. Many comments were received regarding the potential effect, if any, that the blasting operations at the West Roxbury Crushed Stone Quarry would have on the proposed pipeline or West Roxbury M&R Station. Blasting at the Quarry is performed under a permit issued by the City of Boston Fire Department, which specifies a limit on the allowable blast-induced vibration magnitude (e.g., amplitude or peak particle velocity) at any abutting property of 1.0 inch per second.

Algonquin discussed with the owners of the quarry the anticipated schedule and logistics associated with constructing the West Roxbury Lateral and M&R station, as well as the long-term operations of these facilities. No direct conflicts were identified that would inhibit the construction of the Project or the continued day-to-day operation of the quarry. Algonquin also retained the services of a local third-party geotechnical consultant (GeoEnvironmental, Inc. [GZA]) to analyze the potential effects on the proposed pipeline and M&R station from the blasting operations at the quarry, including ground vibrations, air vibrations, hydrogeologic disturbance, and projectiles (e.g., flying rock). The future extent of quarry expansion is not known at this time (GZA, 2014); however, as discussed below, a hypothetical separation was assumed in GZA's analysis.

Since the proposed pipeline is closer to the West Roxbury Crushed Stone Quarry than the M&R station, the focus of the analysis performed by GZA (2014) was directed toward the potential for ground vibrations to impact the pipeline. The pipeline would be constructed approximately 5 feet below grade, so the discussion of fly rock was limited to the potential effects on the aboveground structures proposed for the West Roxbury M&R Station. Algonquin states that the pipeline would consist of externally coated high strength steel with welded connections. The pipeline would be installed within an excavation and enveloped in an engineered backfill consisting of either compacted sand or flowable fill (a low density concrete sand mixture) extending a minimum of 8 inches below the pipe, a minimum of 6 inches on both sides of the pipe, and a minimum of 6 inches over the pipeline. This engineered backfill is designed to support the pipe evenly while maintaining the integrity of the pipe's protective coating. The flowable fill layer would also provide a warning barrier to protect the pipe from third-party contractors.

GZA's analysis assumed a hypothetical aggressive set of circumstances where the quarry might extend its operation to within 5 feet of Grove Street. The GZA report determined that the proposed West Roxbury Lateral pipeline would be subject to vibrations well within pipeline design, with a minimum factor of safety of 10 to 20 times for the proposed pipeline (GZA, 2014). Therefore, further blasting at

the quarry would not damage the proposed pipeline. In addition, it should be noted that existing pipelines currently operate in Grove Street between the quarry and the proposed AIM Project facilities. The existing pipelines consist of two water pipelines and a natural gas distribution pipeline. The closest of these three existing utilities to the quarry is a 12-inch-diameter water pipeline, which ranges in distance between approximately 10 and 20 feet from the quarry property line. We have found no evidence that these existing pipelines have been impacted by blasting at the quarry.

The GZA report also concluded that the components of the M&R station would not be any more sensitive to vibration disturbance or damage than the underground pipeline and that ground vibrations from blasting at the quarry would not be disruptive or damaging to the M&R station. The M&R station buildings would be engineered pre-fabricated pre-cast concrete structures designed for industrial use and would not contain large exterior glass windows, or finishes susceptible to cracking. The in-line tool receivers/launchers and the heaters would be above-grade, steel construction, and are not considered especially sensitive to vibrations. The M&R station facilities would all be bolted onto foundations and well supported.

Fly rock from blasting operations at the quarry was reported to have landed on property located on Centre Lane to the north of the quarry in 2009. As a result, the quarry changed its blasting operations to reduce the potential for fly rock, and since incorporating these changes, fly rock has not been reported from abutting landowners. GZA's report states that, based on the location of the proposed M&R station relative to the Quarry, the probability of a projectile stemming from a blast operation at the Quarry (i.e., fly-rock) landing on the M&R station site is highly unlikely, potentially in the range of 10,000,000 to 1, with the probability of such a rock inflicting a direct strike on a segment of the limited amount of exposed pipe much lower still. Based on its analysis, the GZA report concludes, and we concur, that fly rock does not pose a concern for interruption of service or the release of natural gas at the M&R station (GZA, 2014).

Hydrogeologic disturbance (i.e., changes in rock fracture and joint opening size and chemical/sediment content) can change water supply well yield and quality; however, the M&R station would not have an on-site water supply well.

Comments were received on the draft EIS about the future plans of the quarry and what impact new Massachusetts legislation has on the quarry relative to the AIM Project (Massachusetts Acts of 2014, Chapter 149, Section 7). Section 4.13 has been revised to include a discussion on the future plans of the quarry. Regarding the new legislation, it indicates that any blasting activity associated with a mined product should not be conducted within 500 feet of a natural gas pipeline or M&R station without written approval by the department of public utilities. As indicated above, there is already an existing natural gas pipeline (distribution line) closer to the quarry than the proposed AIM Project facilities. Therefore, any conflict with quarry operations associated with this new legislation already exists. The AIM Project would not create any new conflict that the quarry does not already have to address.

Although not a mining resource, the Buchanan Gypsum Plant is located in the Village of Buchanan, New York, about 0.25 mile northwest of the Stony Point to Yorktown Take-up and Relay segment on the eastern shore of the Hudson River at MP 4.5 (USGS, 2013a). The plant is owned and operated by Lafarge Corporation. According to the company's website, the drywall produced at the Buchanan Gypsum Plant is made from 99 percent recycled material and uses synthetic gypsum. The Project is not expected to affect the drywall plant nor are plant operations expected to impact the Project.



#### 4.1.5 Geologic Hazards

Geologic hazards are natural, physical conditions that can result in damage to land and structures or injury to people. Such hazards typically include seismicity (e.g., earthquakes, surface faults, soil liquefaction), landslides, flash flooding, and ground subsidence. Conditions necessary for the development of other geologic hazards, including avalanches and volcanism are not present in the Project area. In general, the potential for geologic hazards to significantly affect construction or operation of the proposed Project facilities is low.

##### 4.1.5.1 Seismicity and Faults

The majority of significant earthquakes around the world are associated with tectonic subduction zones, where one crustal plate is overriding another (e.g., the Japanese islands), where tectonic plates are sliding past each other (such as California), or where tectonic plates are converging (e.g., the Indian Sub-Continent). Unlike these highly active tectonic regions, the east coast of the United States is a passive tectonic plate boundary located on the “trailing edge” of the North American continental plate, which is relatively seismically quiet.

Earthquakes, however, do occur in the Project area, largely due to trailing edge tectonics and residual stress released from past orogenic (mountain-building) events. The shaking during an earthquake can be expressed in terms of the acceleration due to gravity (g). The Project would not be located in a region that represents a serious seismic risk to the proposed facilities. Based on USGS seismic hazard mapping, the seismic risk in the area of the Project facilities in New York, Connecticut, Rhode Island, and Massachusetts is low. The greatest seismic risk to Project facilities is encountered around the Haverstraw to Stony Point and Stony Point to Yorktown Take-up and Relay segments in New York, where the Project is located near the Ramapo Seismic Zone. Seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake, expressed in terms of (g). For reference, peak ground acceleration (PGA) of 10 percent of gravity is generally considered the minimum threshold for damage to older structures or structures not made to resist earthquakes. The following summarizes the seismic risk present along these pipeline segments:

- PGA with a 2 percent incidence per 50 years (recurrence interval of 1:2,500 years) ranges from 0.20 to 0.06 g (USGS, 2008a); and
- PGA with a 10 percent incidence per 50 years (recurrence interval of 1:475 years) ranges from 0.04 to 0.02 g (USGS, 2008b).

Many scoping comments, and comments on the draft EIS, were received regarding faults in the Project area, specifically the Ramapo Fault, which extends from Pennsylvania and New Jersey into southern New York. The Ramapo Fault is part of a system of northeast-striking faults that were active approximately 200 million years ago. The fault system is a remnant of an active extensional tectonic boundary that once existed in the area. The USGS has extensively studied the Ramapo Fault system and the level of seismicity in the region. The USGS’s review of data for evidence of Quaternary (Holocene) fault activity (i.e., within the last 1.6 million years) encompassing the eastern United States indicates that there is no clear association between the fault and small earthquakes that occur in the region. Further, there is insufficient geologic evidence to indicate the existence of a tectonic fault or a Holocene-age slip or deformation associated with the fault (Crone and Wheeler, 2000; Wheeler, 2006).

Repeat times along the Ramapo Seismic Zone for events of short-period body-wave magnitude ( $m_{BLg}$ ) 6 and 7 are about 670 and 3,400 years, respectively (Sykes et al., 2008). This magnitude scale is used in the more tectonically stable part of eastern North America (McCalpin, 2009). The largest known

event in the region was a  $m_{bLg}$  5.1 earthquake centered northwest of New York City in 1783. There have been a total of three earthquakes greater than 5.0  $m_{bLg}$  in the area. Notably, recent earthquakes in the vicinity of the Project include a  $m_{bLg}$  3.3 earthquake in Wappingers Falls, New York in June 1974 and a  $m_{bLg}$  2.9 event near Peekskill, New York in January 1980 (Jacob et al., 2004).

During field investigations conducted by Hatch Mott MacDonald for the Project's HDD Geotechnical Reports, potential faults were noted. Hatch Mott MacDonald reports the presence of a high-angle normal fault located at the Hudson River HDD between the Manhattan Formation and hornblende granite to the west of the route. Core boring at the Hudson River HDD also noted a possible fault within bore B-27, located within the Hudson River near the eastern shore. The possible fault was noted at a depth of about 260 feet within dolomitic shale. At this location the HDD alignment places the pipeline at a depth of about 90 feet within overburden material. At the Interstate 84/Still River HDD, a thrust fault was noted by Hatch Mott MacDonald north of Mill Plain Road. Core borings at the Interstate 84/Still River HDD noted decomposed bedrock at multiple bore locations in the same general area as this fault. It was noted that the fault may be the cause of the decomposed bedrock. In addition, bore B-2 indicated a possible fault. This bore was taken just west of Interstate 84. The possible fault was noted at a depth of about 103 feet within schistose gneiss. At this location, the HDD alignment places the pipeline at a depth of about 350 feet within bedrock (Hatch Mott MacDonald, 2014a and 2014b).

Many comments were received on the draft EIS related to the safety of the pipeline and potential seismic events. Specific site conditions, including earthquakes, are considered in the design of the pipeline. The recorded magnitude of earthquakes in the Project area is relatively low and the ground vibration would not pose a problem for a modern welded-steel pipeline. Even under much higher ground vibrations, the main risk to pipelines would be where the pipeline is buried along a hillside coupled with saturated unstable soils that could become displaced laterally during an earthquake.

O'Rourke and Palmer (1996) performed a review of the seismic performance of gas transmission lines in southern California and concluded that modern electric arc-welded gas pipelines perform well in seismically active areas of the United States. The study included 11 earthquakes with a magnitude of 5.8 or greater. Based on the low seismic risk and occurrence assigned to the Project area, we find the risk of damage to pipeline facilities by earthquakes to be low.

Secondary seismic effects triggered by strong ground shaking are often more serious than the shaking itself. The most damaging secondary seismic effect is often soil liquefaction, a physical process in which saturated, non-cohesive soils temporarily lose their strength and liquefy (i.e., behave like a viscous liquid). Areas typically susceptible to liquefaction may include soils that are generally sandy or silty and are typically along rivers, streams, lakes, and shorelines, or in areas with shallow groundwater. Soil liquefaction can result in surface settlement in areas where the ground surface is flat, and soil flow or slope instability in areas where the landscape is sloped. Soil conditions necessary for liquefaction to occur would likely be present in the Project area. However, due to the low potential for strong and prolonged ground shaking associated with a seismic event, we find the potential for soil liquefaction to be low. In addition, no modern occurrences of soil liquefaction due to earthquake shaking in the Project area have been documented (Brankman and Baise, 2008).

#### **4.1.5.2 Landslides**

Landslides involve the down-slope movement of earth materials under force of gravity due to natural or man-made causes. The proposed Project facilities would be located in an area considered to have a low incidence of landslides (Radbruch-Hall et al., 1982). In addition, the physiography of the Project area is characterized by bedrock overlain with till-covered uplands; lowlands consisting of glacial

outwash, glacio-fluvial, and fluvial deposits; and many of the slopes in the Project area consist of till or bedrock, which are less vulnerable to landslides and slumping.

During construction, Algonquin would implement the measures outlined in its E&SCP to minimize potential risks from landslides and soil erosion. Where slopes are encountered along the pipeline alignment, the upslope side of the construction right-of-way would be cut during grading and used to fill the downslope side of the right-of-way, thereby providing a safe and level surface on which to operate heavy equipment. During grade restoration, the spoil would be placed back in the cut, compacted to restore original contours, and reseeded. Once grade and drainage patterns have been reestablished, permanent erosion controls (e.g., slope breakers) would be installed as needed. These activities would minimize the potential for man-induced landslides and erosion in the Project area.

The construction techniques described in section 2.3.1 would also minimize the potential for slope failure and erosion. These techniques include the use of erosion control devices (e.g., silt fences, slope breakers) and other best management practices (BMPs) to stabilize soils. Algonquin's E&SCP includes field procedures associated with the use of slope breakers, temporary and permanent trench plugs, matting, riprap, and other erosion control measures. Based on the low landslide incidence potential in the Project area and the mitigation and design features discussed above, we find the potential for landslides to affect the Project to be low.

#### **4.1.5.3 Flash Flooding**

Flash flooding has the potential to occur in streams within the Project area, particularly in areas of higher relief and narrower stream valleys in Connecticut; however, no such features are located along the Project route or in proximity to aboveground features. Concerns over flash flooding have increased in recent years due to significant rainfall events associated with tropical storms that have passed close to the Project area. Flooding can also be caused by seasonal variations in precipitation.

No permanent aboveground facilities are located within 100-year floodplains as reported by the Federal Emergency Management Agency. The only locations where there are aboveground facilities located near mapped 100-year floodplains are the eastern edge of the Cromwell Compressor Station property and the construction workspace for the Stony Point M&R Station. None of the permanent aboveground facilities associated with the Project would add fill or impervious surfaces that would impact flood storage. Aboveground facilities located in and near floodplains and pipeline stream crossings would be designed to prevent potential impacts from high-velocity flows, largely by controlling erosion, in accordance with Algonquin's E&SCP.

Construction of Project pipelines through 100-year floodplains would not result in the loss of floodplain storage as the pipelines are installed below the ground surface and would not displace flow waters. Measures would be implemented to handle waterbody flow increases during pipeline installation activities such as having additional pumps on stand-by for dam-and-pump crossings or appropriately sizing flumes to handle storm flows for flume crossings. Equipment crossings would be designed to handle higher flow volumes that could be anticipated from storm events and flooding situations. After construction is completed, each crossing would be periodically inspected for signs of erosion and remediated, as necessary. For these reasons, impacts on Project facilities from flash flooding are not expected.

#### **4.1.5.4 Ground Subsidence**

Ground subsidence is the local downward movement of surface material with little or no horizontal movement. Ground subsidence can affect pipelines and aboveground facilities by causing a loss of support that may bend or even rupture a pipeline or weaken the foundations of the aboveground facilities. Common causes of ground subsidence include the presence of karst terrain, underground mining, and significant groundwater or fluid withdrawal, associated with oil-producing regions.

Karst terrain can form by the long-term action of groundwater or surface water on soluble bedrock (e.g., limestone, dolostone, and gypsum). Two mapped calcareous bedrock deposits would be crossed by the AIM Project: the Balmville Limestone in New York and the Stockbridge Marble in Connecticut. The Stony Point to Yorktown Take-up and Relay segment crosses the Balmville Limestone from about MPs 3.9 to 4.3. The Southeast to MLV 19 Take-up and Relay segment crosses the Stockbridge Marble at about MP 1.6 and again from about MPs 1.9 to 2.0. We conclude that subsidence due to karst conditions is not anticipated to be a concern for the Project due to the minimal occurrence of calcareous bedrock crossed by the Project, and because no mapped karst features have been identified in these areas (National Cave and Karst Research Institute, 1984).

Underground mining poses risks to engineered structures due to the potential for the overlying strata to collapse into the void formed by the extraction of minerals. As discussed above, there are no current or former underground mining activities in the vicinity of the Project (Altamura, 1987; USGS, 2013a, 2013b, 2013c). Therefore, we find that the Project would not be subject to hazards associated with underground mines.

#### **4.1.6 Rock Removal and Blasting**

Algonquin anticipates that some rock removal would be required during construction of the pipeline and compressor station facilities. About 7.2 miles of shallow bedrock in the Project area is characterized as lithic and would likely need to be removed via blasting. Algonquin has prepared a Rock Removal Plan, which we reviewed and found acceptable, to be used at each site where solid rock is encountered as either part of the pipeline trench excavation, the grading to prepare a level linear work area, or the excavation for aboveground facilities (see appendix E). The Rock Removal Plan indicates that an experienced contractor would analyze the rock type, and consider all other contributing factors, including location, surrounding environment, nearby facilities, residences, wells and springs, and/or resources before selecting the suitable rock removal technique. Approval by Algonquin would be required for the selection of all rock removal techniques. All blasting operations would be performed according to strict guidelines designed to control energy release and protect personnel and property in the vicinity of the blast zone. These guidelines would be consistent with all federal, state, and local regulations that apply to controlled-blasting and blast vibration limits in the vicinity of structures and underground utilities.

#### **4.1.7 Geotechnical Investigations for the Proposed HDDs**

Algonquin proposes to cross the Hudson River along the Stony Point to Yorktown Take-up and Relay segment and the Still River along the Southeast to MLV 19 Take-up and Relay segment using the HDD method. Geotechnical feasibility studies were performed to evaluate subsurface conditions at the proposed HDD sites. The purpose of the geotechnical investigations was threefold:

- to understand if the existing condition would be suitable to use the HDD method;

- to help design each HDD crossing, and
- to identify the location of a deep historic river channel that was known to exist further to the north of the proposed Hudson River HDD.

Table 4.1.7-1 summarizes the results of the geotechnical investigations that have been conducted to date for each of the proposed HDD crossings.

The investigations indicate that the Hudson River HDD (including the revised alignment) would be located entirely within the overburden material above the bedrock. The majority of the Interstate 84/Still River HDD would be located in bedrock and would only cross overburden material near the HDD entry and exit holes. As indicated in table 4.1.7-1, the overburden material at the Interstate 84/Still River HDD is up to 140 feet thick. This thickness occurs under the wetland on the east side Interstate 84. The HDD alignment would be at a depth of about 150 feet in this location. For additional information on these crossing and feasibility studies, see section 4.3.2.3.

TABLE 4.1.7-1					
Summary of Geotechnical Investigations for the HDD Crossings Along the AIM Project					
Facility/HDD	Pipe Diameter	MP		Maximum Depth Below Grade (feet)	Description
		Begin	End		
Stony Point to Yorktown Take-up and Relay					
Hudson River HDD	42-inch	3.0	3.9	160	Overburden material 20 to 65 feet thick consisting of unconsolidated soil, very soft clays, and loose sands, underlain by limestone, dolostone, and schist.
Southeast to MLV 19					
Interstate 84/Still River	42-inch	1.4	2.1	235	Gneissic bedrock overlain by 5 to 140 feet of coarse-grained deposits of sand and gravel.
Sources: Hatch Mott MacDonald 2014c and 2014d					

#### 4.1.8 Paleontological Resources

Paleontological resources are vertebrate and invertebrate fossils that are sometimes discovered at locations under excavation or in areas exposed by erosion. Direct effects on paleontological resources could occur during Project construction by activities such as grading or trenching. Indirect effects on fossil beds could result from erosion caused by slope regading, vegetation clearing, and/or unauthorized collection.

The majority of the bedrock units crossed by the proposed Project are either metamorphic or igneous in origin and do not contain fossils. Sedimentary rocks identified underlying the Project include the Balmville Limestone in New York, the Portland Arkose and New Haven Arkose in Connecticut, and the Roxbury Conglomerate in Massachusetts. The Balmville Limestone contains significant amounts of brachiopod and conodont fossils (Zen, 1983). These fossils are frequently found in Paleozoic strata across New York State and are not considered significant paleontological resources. No significant fossils have been identified in the Roxbury Conglomerate.

Paleontological resources along the Connecticut portions of the Project have the potential to be of greater significance than those located elsewhere along the Project. The sedimentary rock units underlying the Connecticut portions of the Project are the Portland Arkose and the New Haven Arkose. Both were deposited during the Mesozoic era, also known as the age of the reptiles. Few remains of

reptile tracks have been found in the New Haven Arkose, dinosaur bones and reptile tracks have been found in the Portland Arkose, and fossil fishes have been found in black shale beds within the two arkoses. Mesozoic fossils of the Connecticut Valley are typically reptile tracks and other imprints in stone with fewer findings of dinosaur bones. Dinosaur tracks are more prominent in Triassic age strata across the region (Colbert, 1970).

The Portland Arkose underlies the Cromwell Compressor Station and the entire Line-36A Loop Extension, whereas the New Haven Arkose underlies the North Haven M&R Station. Glaciofluvial surficial geological deposits have been mapped at each of these locations that overly the sedimentary bedrock. Proposed activities on each of these portions of the Project would only involve the expansion of existing facilities or the expansion of the existing pipeline within the right-of-way. Based on the presence of a mapped surficial layer and the nature of the work proposed, we find that paleontological resources associated with Mesozoic strata in Connecticut would not be affected by the Project.

## **4.2 SOILS**

### **4.2.1 Existing Soil Resources**

The descriptions and characteristics of soils discussed in this section were compiled from a variety of data sources including soil surveys and website databases published and maintained by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Soil surveys referenced include those for Rockland, Westchester, and Putnam Counties in New York; Fairfield, New Haven, Hartford, Middlesex, New London, and Windham Counties in Connecticut; Providence County in Rhode Island; and Bristol, Plymouth, Suffolk, Norfolk, and Middlesex Counties in Massachusetts. Websites used include the NRCS “Official Series Description” website (USDA, 2010) and the NRCS “Web Soil Survey” website (USDA, 2013c).

Soils within the Project area were mapped utilizing the NRCS digital Soil Survey Geographic Database (SSURGO), which includes geospatially referenced Geographic Information System (GIS) soil map unit polygons at a scale of 1:24,000 (USDA, 2013d). SSURGO data contain the most detailed level of soil mapping performed by the NRCS, and corresponds with or supersedes the original county soil survey mapping.

Soils in the vicinity of the proposed Project are primarily developed in glacial till and other glacial deposits. However, in developed residential areas like some of those crossed by the proposed pipeline segments, soils have typically been disturbed in some manner. These disturbances can include grading to create a level landscape for development, filling in areas that are wet or possess other undesirable soil characteristics, or filling areas to dispose of materials such as dredge spoil or coal ash.

#### **4.2.1.1 Pipeline Facilities**

Soils along the proposed pipeline segments were evaluated to identify prime farmland and major soil characteristics that could affect construction or increase the potential for construction-related soil impacts. The soil characteristics evaluated were erosion potential, prime farmland, hydric soils, compaction-prone soils, shallow bedrock, and soils with poor revegetation potential. Additional soil-related impacts due to construction or operation include disruption of agricultural drainage or irrigation systems. Table 4.2.1-1 provides a summary of the significant soil characteristics that would be crossed by the proposed pipeline facilities. Tables 4.2.1-2 and 4.2.1-3 provide summaries, in acres, describing the construction and operation impacts, respectively, on significant soil characteristics associated with the pipeline facilities. Individual soil characteristics and the potential mitigation measures that would be employed by Algonquin are discussed in the sections below.

TABLE 4.2.1-1								
Summary of Soil Characteristics Along the Pipeline Facilities for the AIM Project (miles)								
Pipeline Facility	Right-of-Way Length <sup>a</sup>	Highly Erodible		Prime Farmland <sup>c</sup>	Hydric	Compact Prone <sup>d</sup>	Shallow Bedrock <sup>e</sup>	Soils with Revegetation Concern <sup>f</sup>
		Water	Wind <sup>b</sup>					
<b>Replacement Pipeline</b>								
Haverstraw to Stony Point Take-up and Relay	3.3	0.0	0.0	0.1	0.6	0.1	0.4	2.8
Stony Point to Yorktown Take-up and Relay	12.3	0.0	0.7	1.8	1.7	1.0	3.3	7.2
Southeast to MLV 19 Take-up and Relay	4.5	0.0	0.0	1.9	0.9	0.8	0.4	2.2
E-1 System Lateral Take-up and Relay	9.1	0.7	0.4	3.1	2.0	1.5	1.1	5.5
<b>Loop Extension</b>								
Line-36A Loop Extension	2.0	<0.1	0.3	1.3	0.3	0.3	0.0	1.7
E-1 System Lateral Loop Extension	1.3	0.6	0.0	0.1	0.2	<0.1	0.6	0.8
<b>New Pipeline</b>								
West Roxbury Pipeline Lateral	4.9	0.0	0.0	0.0	0.0	0.0	1.2	1.1
<b>Total</b>	<b>37.4</b>	<b>1.3</b>	<b>1.4</b>	<b>8.3</b>	<b>5.7</b>	<b>3.7</b>	<b>7.2</b>	<b>21.3</b>
<sup>a</sup> Several soil types have multiple characteristics. As a result, the sum of the rows will not total the pipeline length.								
<sup>b</sup> Includes soils in wind erodibility groups 1 and 2.								
<sup>c</sup> Prime Farmland includes Farmland of Statewide Importance and Unique Farmland.								
<sup>d</sup> Compact prone soils include those ranked as moderate and high.								
<sup>e</sup> All shallow bedrock associated with the Project is lithic.								
<sup>f</sup> The ability of soils within the AIM Project area to support successful revegetation were determined by evaluating the range of slope, erosion potential, and drainage class.								
Source: USDA, 2013c, 2013d								

TABLE 4.2.1-2								
Summary of Soil Characteristics Affected During Construction of the Pipeline Facilities for the AIM Project (acres) <sup>a</sup>								
Pipeline Facility	Total Acres <sup>b</sup>	Highly Erodible		Prime Farmland <sup>d</sup>	Hydric	Compact Prone <sup>e</sup>	Shallow Bedrock <sup>f</sup>	Soils with Revegetation Concern <sup>g</sup>
		Water	Wind <sup>c</sup>					
<b>Replacement Pipeline</b>								
Haverstraw to Stony Point Take-up and Relay	45.5	0.0	0.0	3.0	7.0	1.8	2.4	37.2
Stony Point to Yorktown Take-up and Relay	166.2	0.0	6.6	24.1	17.3	13.3	56.3	93.3
Southeast to MLV 19 Take-up and Relay	62.0	0.0	0.0	25.1	8.7	7.5	4.0	38.6
E-1 System Lateral Take-up and Relay	95.1	6.5	5.6	33.9	19.0	21.1	15.5	58.8
<b>Loop Extension</b>								
Line-36A Loop Extension	23.7	<0.1	3.4	12.8	3.8	3.9	0.0	16.9
E-1 System Lateral Loop Extension	14.2	1.9	0.0	2.1	1.2	3.4	6.2	8.6
<b>New Pipeline</b>								
West Roxbury Pipeline Lateral	43.5	0.0	0.0	0.0	0.0	0.0	4.9	9.2
<b>Total</b>	<b>450.2</b>	<b>8.4</b>	<b>15.6</b>	<b>101.0</b>	<b>57.0</b>	<b>51.0</b>	<b>89.3</b>	<b>262.6</b>
<sup>a</sup> Includes all construction workspace, including the existing permanent right-of-way and includes the new land area that would be permanently affected during operation.								
<sup>b</sup> Several soil types have multiple characteristics. As a result, the sum of the rows will not total the pipeline acreage.								
<sup>c</sup> Includes soils in wind erodibility groups 1 and 2.								
<sup>d</sup> Prime Farmland includes Farmland of Statewide Importance and Unique Farmland.								
<sup>e</sup> Compact prone soils include those ranked as moderate and high.								
<sup>f</sup> All shallow bedrock associated with the Project is lithic.								
<sup>g</sup> The ability of soils within the AIM Project area to support successful revegetation were determined by evaluating the range of slope, erosion potential, and drainage class.								
Source: USDA, 2013c, 2013d								



TABLE 4.2.1-3								
Summary of Soil Characteristics Affected During Operation of the Pipeline Facilities for the AIM Project (acres) <sup>a</sup>								
Project Facility	Total Acres <sup>b</sup>	Highly Erodible		Prime Farmland <sup>d</sup>	Hydric	Compact Prone <sup>e</sup>	Shallow Bedrock <sup>f</sup>	Soils with Revegetation Concern <sup>g</sup>
		Water	Wind <sup>c</sup>					
<b>Replacement Pipeline</b>								
Haverstraw to Stony Point Take-up and Relay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stony Point to Yorktown Take-up and Relay	13.6	0.0	0.6	0.2	1.7	0.7	4.2	6.7
Southeast to MLV 19 Take-up and Relay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E-1 System Lateral Take-up and Relay	8.3	0.7	0.5	2.9	1.9	1.8	1.0	4.8
<b>Loop Extension</b>								
Line-36A Loop Extension	6.5	0.0	0.7	4.0	1.3	1.0	0.0	4.2
E-1 System Lateral Loop Extension	3.2	0.5	0.0	0.3	0.3	0.8	1.5	2.0
<b>New Pipeline</b>								
West Roxbury Pipeline Lateral	2.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
<b>Total</b>	<b>33.9</b>	<b>1.2</b>	<b>1.8</b>	<b>7.4</b>	<b>5.2</b>	<b>4.3</b>	<b>6.7</b>	<b>18.7</b>
<sup>a</sup> Includes only the new permanent right-of-way, not Algonquin's existing permanent easement.								
<sup>b</sup> Several soil types have multiple characteristics. As a result, the sum of the rows will not total the pipeline length.								
<sup>c</sup> Includes soils in wind erodibility groups 1 and 2.								
<sup>d</sup> Prime Farmland includes Farmland of Statewide Importance and Unique Farmland.								
<sup>e</sup> Compact prone soils include those ranked as moderate and high.								
<sup>f</sup> All shallow bedrock associated with the Project is lithic.								
<sup>g</sup> The ability of soils within the AIM Project area to support successful revegetation were determined by evaluating range of slope, erosion potential, and drainage class.								
Source: USDA, 2013a, 2013b								

## Erosion by Water and Wind

Erosion is a continuing natural process that can be accelerated by human disturbance. Factors such as soil texture, structure, slope, vegetative cover, rainfall intensity, and wind intensity can influence the degree of erosion. Soils most susceptible to erosion by water are typified by bare or sparse vegetative cover, non-cohesive soil particles with low infiltration rates, and moderate to steep slopes. Soils typically more resistant to erosion by water include those that occupy low relief areas, are well vegetated, and have high infiltration capacity and internal permeability. Wind erosion processes are less affected by slope angles than water processes. Wind-induced erosion often occurs on dry soil where vegetative cover is sparse and strong winds are prevalent.

The potential for soils in the Project area to be eroded by water was evaluated based on the K factor. The K factor represents a relative quantitative index of the susceptibility of bare soil to particle detachment and transport by water. K factor values are primarily based on soil texture, although organic matter content, structure size class, and permeability are also pertinent factors. The higher the K factor value the more susceptible the soil is to water erosion (Multimedia Environmental Pollutant Assessment System, 2010).

The potential for soils in the Project area to be eroded by water was determined by averaging K factor values for all soil horizons for each soil type. K factors were obtained from the NRCS Web Soil Survey website (USDA, 2013c). Based on the average K factor, each soil type was grouped into a water erosion class of “Low,” “Moderate,” and “High.” Low values ranged from 0.02 to 0.2, moderate values ranged from 0.2 to 0.4, and high values ranged from 0.4 to 0.7. For map units comprised of a complex of different soil types, the soil type with the most limiting average K factor was used to categorize the map unit into a low, medium, or high class.

Susceptibility to wind erosion was based on the wind erodibility group (WEG) designation, where available. WEG is a grouping of soils that have similar surface-soil properties affecting their resistance to soil blowing, including texture, organic matter content, and aggregate stability. WEGs may range from 1 to 8, with 1 being the highest potential for wind erosion, and 8 the lowest (USDA, 2014a). A WEG designation and/or K factor is not available for some of the map units consisting of pavement/developed land, some tidal marsh soils, or fill materials (e.g., Udorthents, Urban Land). Pavements and buildings have a low potential for erosion because they consist primarily of impervious surfaces. Soils derived from fill material occur primarily on flat to gently sloping terrain, and have predominantly sandy to loamy sand textured surface horizons, and a low to moderate potential to generate runoff. Map units consisting of fill material and developed land were not assigned a K factor value for the purpose of this EIS as fill materials vary in consistency, even within the same mapping unit. Where WEG data were not available, a WEG of 8 was assigned to map units comprised entirely or principally of paved areas or tidal marshes, and a WEG of 5 was assigned to map units comprised of fill materials and natural soils. This is consistent with the WEGs assigned by the NRCS to the other comparable map units in the Project area.

Based on the K factor designations discussed above, approximately 1.3 miles (4 percent) of the soils along the proposed Project pipeline segments are considered highly water erodible. These soils are found entirely along the pipeline segments in Connecticut. About 8.4 acres (2 percent) of soils within the proposed pipeline workspaces and 1.2 acres (4 percent) of the soils within the permanent right-of-way are considered highly erodible by water.

Based on the WEG designation discussed above it was determined that about 1.4 miles (4 percent) of the soils along the Project pipeline segments are considered highly wind erodible. About 15.6 acres (4 percent) of soils within the proposed pipeline workspaces and 1.8 acres (5 percent) of the soils within the permanent right-of-way are considered highly erodible by wind.

### **Prime Farmland Soils**

The USDA defines prime farmland as “land that is best suited to food, feed, fiber, and oilseed crops.” This designation includes cultivated land, pasture, woodland, or other lands that are either used for food or fiber crops or are available for these uses. The fact that a particular soil is considered prime farmland does not mean that it is currently in agricultural use, some prime farmland soils may be located in forested, open, or residential areas. Urbanized land and open water are excluded from prime farmland. Prime farmland typically contains few or no rocks, is permeable to water and air, is not excessively erodible or saturated with water for long periods, and is not subject to frequent, prolonged flooding during the growing season. Soils that do not meet the above criteria may be considered prime farmland if the limiting factor is mitigated (e.g., artificial drainage). The numbers presented in tables 4.2.1-1 through 4.2.1-4 and the paragraph below include Farmland of Statewide Importance and Unique Farmlands.

About 8.3 miles (22 percent) of the soils along the proposed pipeline segments are considered prime farmland. About 101.0 acres (22 percent) of soils within the proposed pipeline workspaces and 7.4 acres (22 percent) of the soils within the permanent rights-of-way are considered prime farmland. Of

these acres, about 17.7 acres of the soils within the proposed pipeline workspaces and 2.6 acres of the soils within the permanent rights-of-way are active agricultural land. The land uses for the remaining 83.3 acres of the soils within the proposed pipeline workspaces and 4.8 acres of the soils within the permanent rights-of-way consist of forest/woodland, industrial, open land, and residential.

## **Hydric Soils**

Hydric soils are defined as “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (Federal Register, 1994). Soils that are artificially drained or protected from flooding (e.g., by levees) are still considered hydric if the soil in its undisturbed state would meet the definition of a hydric soil. Generally, hydric soils are those soils that are poorly and very poorly drained. Hydric soils may indicate the presence of wetlands. Wetland areas containing hydric soils were delineated within the entire Project area as described in section 4.4.1. During Project surveys, some wetlands were delineated in areas that were not mapped as hydric soils in SSURGO data. In these instances, wetland field data was used to supplement the SSURGO hydric data. Due to extended periods of saturation, hydric soils can be prone to compaction and rutting. In addition, high groundwater levels associated with hydric soils could create a buoyancy hazard for the pipeline. Detailed information about the location of wetlands affected by the Project is provided in appendix K table K-1.

About 5.7 miles (15 percent) of the soils along the proposed Project pipeline segments are considered hydric. About 57.0 acres (13 percent) of soils within the proposed pipeline workspaces and 5.2 acres (15 percent) of the soils within the permanent rights-of-way are considered hydric.

## **Compaction Potential**

Soil compaction modifies the structure and reduces the porosity and moisture-holding capacity of soils. Construction equipment traveling over wet soils could disrupt the soil structure, reduce pore space, increase runoff potential, or cause rutting. The degree of compaction depends on moisture content and soil texture. Fine-textured soils with poor internal drainage that are moist or saturated during construction are most susceptible to compaction and rutting.

Many soils along the proposed pipeline segments have likely already been compacted due to past development and some areas being covered by paved surfaces. The degree of compaction was evaluated based on the drainage class of the soils. Very poorly and poorly drained soils were considered to have a high potential for compaction. Somewhat poorly to moderately well drained soils were considered to have a moderate potential for soil compaction. Well drained to excessively drained soils were considered to have a low potential for soil compaction.

Soils with a high potential for compaction and structural damage in the Project area are typically very poorly drained soils located in wetlands with an organic soil component. Special construction procedures within wetlands are discussed in section 4.4 and Algonquin’s E&SCP.

About 3.7 miles (10 percent) of the soils along the proposed Project pipeline segments are soils with a high compaction potential. About 51.0 acres (11 percent) of soils within the proposed pipeline workspaces and 4.3 acres (13 percent) of the soils within the permanent rights-of-way are soils with a high compaction potential.

## **Revegetation Potential**

The ability of soils within the Project area to support successful revegetation was determined by NRCS official series descriptions and county soil surveys. The drainage class, slope class, and erosion potential of each soil type within the Project area was evaluated to determine revegetation potential. Other considerations included whether or not the mapped soils were natural, human transported, or disturbed.

Droughty soils that have coarse-textured surface layers and are moderately well to excessively drained may prove difficult to revegetate. The drier soils have less water to aid in the germination and eventual establishment of new vegetation. The coarser textured soils also have a lower water holding capacity following precipitation, which could result in moisture deficiencies in the root zone, creating unfavorable conditions for many plants. Droughty soils along the Project were identified by querying the SSURGO database for component soils series that have a surface texture of sandy loam or coarser, and are moderately well to excessively drained. In addition, steep slopes along the Project may make the reestablishment of vegetation difficult. Soils that occur on slopes greater than 8 percent are also considered areas with a revegetation concern.

About 21.3 miles (57 percent) of the soils along the proposed Project pipeline construction segments are soils with a revegetation concern. About 262.6 acres (58 percent) of soils within the proposed pipeline workspaces and 18.7 acres (55 percent) of the soils within the permanent right-of-way are soils with a revegetation concern (see tables 4.2.1-1 through 4.2.1-3).

## **Shallow Bedrock**

Introducing stones and other rock fragments to surface soil layers may reduce soil moisture-holding capacity, resulting in a reduction of soil productivity. Additionally, some agricultural equipment may be damaged by contact with large rocks and stones. Rock fragments at the surface and in the surface layer may be encountered during grading, trenching, and backfilling. Construction through soils with shallow bedrock could result in the incorporation of bedrock fragments into surface soils.

A large portion of the soils to be affected along the Project pipeline segments are considered stony/rocky soils. The potential to introduce stone and rock into surface soils in those areas could be significant. However, the soils in those areas already contain surface layers with significant quantities of rock fragments. The potential for introducing rock into the topsoil was evaluated based on bedrock depth, and the presence of fill material and disturbed soils. USDA data were used to identify soil map units where depth to bedrock is generally anticipated to be less than 5 feet (60 inches) from the soil surface (USDA, 2010).

With regard to fill materials and disturbed soils, soil map units comprised entirely or partially of fill materials and disturbed soils were also considered areas where rock could potentially be introduced into the topsoil, because these areas often contain concrete and other demolition debris. The Official Series Descriptions and county soil survey descriptions were used to identify areas with fill materials and disturbed soils. Within the Project area, the urban land, Udorthents, Pits, and quarry soil series are comprised of fill materials or disturbed soils. Soil complexes including any of these map units may also be partially or entirely comprised of fill materials and disturbed soils. Given the industrial and highly developed nature of most of the proposed West Roxbury Lateral area, fill materials may also exist in areas that have been mapped by the NRCS as natural soils.

About 7.2 miles (19 percent) of soils that would be affected along the proposed Project pipeline segments have shallow depth to bedrock. About 89.3 acres (20 percent) of soils within the proposed pipeline workspaces and 6.7 acres (20 percent) of the soils within the permanent right-of-way are soils with shallow depth to bedrock.

Scoping comments were received regarding shallow bedrock and the potential need for blasting within the New York City Watershed. Portions of the Stony Point to Yorktown Take-up and Relay and the Southeast Compressor Station are found within the Croton River Watershed, which is part of the New York City Watershed. No soils along the pipeline segment within the Croton River Watershed were mapped by SSURGO as having shallow bedrock (i.e., bedrock within 60 inches of the soil surface). Approximately 2.1 acres of soil within the Southeast Compressor Station has a shallow depth to bedrock. The eastern portion of the temporary workspace at this compressor station has shallow bedrock that would be used for storage of excess fill, and no excavation is planned. Blasting would also not be needed at the Southeast Compressor Station site.

#### **4.2.1.2 Aboveground Facilities**

Table 4.2.1-4 summarizes the soil characteristics affected during construction of the aboveground facilities. None of the soils at the aboveground facility sites have a high potential to be eroded by water. However, some aboveground facility sites have soils considered highly erodible by wind; 5.9 acres at the existing compressor station sites, 2.4 acres at the new M&R station sites, and 4.3 acres at existing M&R stations to be modified or removed.

About 14.1 acres of the soils mapped at these facilities are considered prime farmland, and about 1.3 of these acres would be permanently impacted by the Project. None of the new proposed aboveground facilities are greater than 5 acres. In addition, the lands associated with the aboveground facility sites are not currently being used for agricultural purposes and are not available for future production; therefore, the Farmland Protection Policy Act would not apply (USDA, 2014b). While there are mapped hydric soils and delineated wetlands at some of the proposed aboveground facilities, no wetlands would be impacted by any of the facilities.

#### **4.2.1.3 Pipe and Contractor Ware Yards**

Algonquin has identified three pipe and contractor ware yards that would be used during construction. These yards would temporarily affect about 28.6 acres of land, all of which is industrial/commercial land. The three pipe and contractor ware yards that would be used during construction of the pipeline facilities are located in existing yards or in industrial/commercial areas. If necessary, rough grading and vegetation clearing of temporary construction yards would be conducted. No significant impacts on soils in the pipe and contractor ware yards are anticipated.

#### **4.2.1.4 Access Roads**

In addition to existing public roads, Algonquin proposes to utilize 28 TARs and 8 PARs to access its facilities. The existing roads are comprised of gravel roads, unimproved dirt roads, paved and gravel driveways, private industrial and commercial roads, paved parking lots, and golf course roads. The one exception is the new PAR to be constructed for the new Assonet M&R Station, which would permanently disturb less than 0.1 acre (0.03 acre) of land. None of the proposed access roads would have a significant impact on soils.

TABLE 4.2.1-4								
Summary of Soil Characteristics Affected During Construction of Aboveground Facilities for the AIM Project (acres)								
Facility	Total Acres <sup>a</sup>	Highly Erodible		Prime Farmland <sup>c</sup>	Hydric	Compact Prone <sup>d</sup>	Shallow Bedrock <sup>e</sup>	Soils with Revegetation Concern <sup>f</sup>
		Water	Wind <sup>b</sup>					
Existing Compressor Station Modifications								
Stony Point Compressor Station	20.3	0.0	0.0	0.4	1.3	0.0	0.0	20.3
Southeast Compressor Station	15.9	0.0	0.0	4.0	0.0	<0.1	2.1	15.9
Oxford Compressor Station	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cromwell Compressor Station	14.9	0.0	5.9	5.9	0.4	0.4	0.0	12.8
Chaplin Compressor Station	11.7	0.0	0.0	0.0	0.2	0.2	0.0	11.5
Burrillville Compressor Station	16.7	0.0	0.0	0.0	1.4	1.4	0.0	0.0
Subtotal	79.5	0.0	5.9	10.3	3.3	2.0	2.1	60.5
Existing M&R Station Modifications								
Stony Point M&R Station	2.2 <sup>g</sup>	0.0	0.0	0.3	1.3	1.3	0.0	2.2
Peekskill M&R Station	2.1 <sup>g</sup>	0.0	0.0	0.0	0.0	0.0	2.1	0.0
Cortlandt M&R Station	3.8 <sup>g</sup>	0.0	0.0	2.6	0.0	0.0	1.2	0.9
West Danbury M&R Station	2.9 <sup>h</sup>	0.0	0.0	0.0	0.3	0.3	0.0	2.7
Southbury M&R Station	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Waterbury M&R Station	0.4	0.0	0.2	0.0	0.0	0.0	0.0	0.4
North Haven M&R Station	0.5	0.0	0.4	0.1	0.1	0.1	0.0	0.2
Guilford M&R Station	0.5	0.0	0.1	0.0	0.5	0.5	<0.1	<0.1
Farmington M&R Station	0.4	0.0	0.2	<0.1	0.0	<0.1	0.0	0.4
Glastonbury M&R Station	0.8	0.0	0.3	0.3	0.0	0.0	0.0	0.8
Middletown M&R Station	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Salem M&R Station	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Montville M&R Station	1.2 <sup>g</sup>	0.0	0.7	1.2	0.0	0.0	0.0	0.0
Willimantic M&R Station	0.9	0.0	0.4	0.0	0.0	<0.1	0.2	0.9
Pomfret M&R Station	0.4	0.0	0.4	0.4	0.0	0.0	0.0	0.1
Putnam M&R Station	0.3	0.0	0.3	0.3	0.0	0.0	0.0	0.1
North Fall River M&R Station	0.0 <sup>i</sup>	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Bedford M&R Station	1.8	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Middleborough M&R Station	0.6	0.0	0.6	0.6	0.0	0.0	0.0	0.0
Brockton M&R Station	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Norwood M&R Station	0.8	0.0	<0.1	0.0	0.0	0.0	0.0	0.0
Needham M&R Station	0.4	0.0	0.4	0.4	0.0	0.0	0.0	0.0
Wellesley M&R Station	0.5	0.0	<0.1	0.0	0.0	0.0	0.0	<0.1
Mystic M&R Station	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	13.8 <sup>j</sup>	0.0	4.0	3.6	1.0	1.0	0.2	6.6
New M&R Stations								
Oakland Heights M&R Station	2.4	0.0	2.4	0.0	0.0	0.0	0.6	1.4
Assonet M&R Station	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Roxbury M&R Station	1.0 <sup>g</sup>	0.0	0.7	0.0	0.0	0.0	0.5	0.5
Subtotal	3.9	0.0	2.4	0.0	0.0	0.0	1.1	1.4
Existing M&R Station Removal								
Greenville M&R Station	0.3	0.0	0.3	0.2	0.0	0.0	<0.1	<0.1
Total	97.5 <sup>j</sup>	0.0	12.6	14.1	4.3	3.0	3.4	68.5

TABLE 4.2.1-4 (cont'd)	
Summary of Soil Characteristics Affected During Construction of Aboveground Facilities for the AIM Project (acres)	
a	Includes acres of construction workspace. Several soil types have multiple characteristics. As a result, the sum of the rows will not total the pipeline length. The summary does not include access roads or ATWS.
b	Includes soils in WEGs 1 and 2.
c	Prime Farmland includes Farmland of Statewide Importance and Unique Farmland
d	Compact prone soils include those ranked as moderate and high
e	All shallow bedrock associated with the Project is lithic.
f	The ability of soils within the AIM Project area to support successful revegetation were determined by evaluating range of slope, erosion potential, and drainage class.
g	The temporary workspace shown for each of these M&R stations falls within the overall pipeline workspace area; therefore, these areas are not included in the acreage calculations.
h	Of the 2.9 acres associated with the West Danbury M&R Station, 2.6 acres would be located within the pipeline construction workspace.
i	Work at the North Fall River M&R Station would take place within the existing station footprint.
j	Includes the 2.6 acres at the West Danbury M&R Station that would be located within the pipeline construction workspace and included in the pipeline facilities acreage.
Source: USDA, 2013c, 2013d	

#### 4.2.1.5 Contaminated Soils

Algonquin conducted a corridor database search using Environmental Data Resources, Inc. (EDR) to identify various facilities with potential and/or actual sources of contamination that may impact nearby soils along the existing and proposed pipeline and aboveground facilities in New York, Connecticut, and Massachusetts. Rhode Island was not included in the search, because only one facility (Burrillville Compressor Station) would require work and that activity would take place within Algonquin's existing facility. A corridor database search is not necessary in Rhode Island because Algonquin already owns the property on which the existing Burrillville Compressor Station is located, and this is the only location in Rhode Island where work would occur associated with the Project (i.e., a corridor database search would not identify any sites not already known to Algonquin). In order to identify any known contamination at the Burrillville Compressor Station site, we conducted a search of the RIDEM Office of Waste Management's site inventories, the EPA's Cleanups in My Community database, and the EPA's EnviroFacts database. Based on these sources, no known contaminated soil or groundwater is present at the Burrillville Compressor Station site. A list of databases searched in New York, Connecticut, and Massachusetts is included in table 4.2.1-5.

The review of these sources resulted in the identification of a number of sites with documented soil impacts in the vicinity of Project facilities. Algonquin reviewed the sites located within 500 feet of Project facilities to evaluate their distance from and hydrologic setting relative to Project areas (i.e., whether up-gradient, down-gradient, or cross-gradient) and their current regulatory status (i.e., whether available documentation indicates the continued presence of contamination). The more significant sites identified in the database search are discussed below.

Three documented spills or properties where a release of contaminants occurred were identified with a potential to impact soils along the proposed pipeline facilities in New York. Potential contaminants that may be encountered in soils proximate to these facilities include volatile organic compounds (VOC), petroleum hydrocarbons, polychlorinated biphenyls, and other industrial chemicals.



TABLE 4.2.1-5

## Databases Used to Identify Potentially Contaminated Sites for the AIM Project

New York	Connecticut	Massachusetts
<ul style="list-style-type: none"> <li>• EPA, National Priorities List</li> <li>• EPA, Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)</li> <li>• EPA, CERCLIS – No Further Remedial Action Planned</li> <li>• EPA, Resource Conservation and Recovery Information System (RCRIS) – Corrective Action Facilities (CORRACTS)</li> <li>• RCRIS non CORRACTS Treatment, Storage, and Disposal Facilities (TSDFs)</li> <li>• RCRIS – for Hazardous Waste Generators (large and small quantity generators)</li> <li>• RCRIS – for Hazardous Waste Generators (conditionally exempt small quantity generators and non-generators)</li> <li>• EPA, Emergency Response Notification System (ERNS)</li> <li>• EPA, Facility Index System (FINDS)</li> <li>• U.S. Brownfields</li> <li>• Hazardous Substance Waste Disposal Site Inventory</li> <li>• Inactive Hazardous Waste Disposal Sites in New York State</li> <li>• Environmental Restoration Program Listing (ERP)</li> <li>• Solid waste facilities/landfill sites Conn(SWF/LF)</li> <li>• Leaking storage tank incident reports (LTANKS)</li> <li>• Leaking underground and aboveground storage tanks (HIST LTANKS)</li> <li>• Facilities that have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons (Underground Storage Tanks (UST) and Aboveground Storage Tanks (AST) Petroleum Bulk Storage (PBS) Database)</li> <li>• Major Oil Storage Facilities Database (MOSF UST and AST) Facilities that have petroleum storage capacities in excess of 400,000 gallons</li> <li>• New York State Hazardous Waste Manifest Database</li> <li>• Resource Conservation and Recovery Act (RCRA) – NonGen/ No Longer Regulated (NLR)</li> <li>• Spills incident database (SPILLS)</li> <li>• Engineering and Institutional Controls (ENG/INST Controls)</li> <li>• Voluntary Cleanup Agreements</li> <li>• Drycleaners</li> <li>• Brownfields</li> <li>• State Pollutant Discharge Elimination System</li> </ul>	<ul style="list-style-type: none"> <li>• EPA, National Priorities List</li> <li>• Aerometric Information Retrieval System (AIRS)</li> <li>• EPA, CERCLIS</li> <li>• EPA, CERCLIS – No Further Remedial Action Planned</li> <li>• EPA, RCRIS – CORRACTS)</li> <li>• RCRIS non CORRACTS TSDFs</li> <li>• RCRIS – for Hazardous Waste Generators (large and small quantity generators)</li> <li>• RCRIS – for Hazardous Waste Generators (conditionally exempt small quantity generators and non-generators)</li> <li>• EPA, ERNS</li> <li>• EPA, FINDS</li> <li>• US Brownfields</li> <li>• Inventory of Hazardous Disposal Sites</li> <li>• Site Discovery and Assessment Database (SDADB)</li> <li>• List of Landfills/Transfer Stations (SWF/LF)</li> <li>• Leaking Underground Storage Tank (LUST)</li> <li>• Connecticut Leachate and Wastewater Discharge Sites (LWDS)</li> <li>• UST Data (UST)</li> <li>• Oil &amp; Chemical Spill Database (SPILLS)</li> <li>• Engineering Control Listing (ENG Controls)</li> <li>• Environmental Land Use Restriction Sites (AUL)</li> <li>• Voluntary Cleanup Agreements</li> <li>• Drycleaners</li> <li>• Brownfields</li> <li>• New York, New Jersey, Rhode Island, and Connecticut Hazardous Waste Manifest Database (Manifest)</li> <li>• Connecticut National Pollutant Discharge Elimination System</li> <li>• Contaminated or Potentially Contaminated Sites (CPCS)</li> <li>• RCRA TSDF</li> <li>• RCRA – NonGen/NLR</li> <li>• 2020 Corrective Action Database (2020 COR ACTION)</li> <li>• Connecticut Property Database (CT Property)</li> <li>• EDR Manufactured Gas Plant (MGP)</li> </ul>	<ul style="list-style-type: none"> <li>• EPA, National Priorities List</li> <li>• EPA, CERCLIS</li> <li>• EPA, CERCLIS – No Further Remedial Action Planned</li> <li>• EPA, RCRIS – CORRACTS</li> <li>• RCRIS non CORRACTS TSDFs</li> <li>• RCRIS – for Hazardous Waste Generators (large and small quantity generators)</li> <li>• RCRIS – for Hazardous Waste Generators (conditionally exempt small quantity generators and non-generators)</li> <li>• EPA, ERNS</li> <li>• EPA, FINDS</li> <li>• US Brownfields</li> <li>• State Hazardous Waste Sites</li> <li>• State Landfill or Solid Waste Disposal sites</li> <li>• State Registered UST</li> <li>• State LUST</li> <li>• State Leaking Aboveground Storage Tanks (LAST)</li> <li>• State Registered Aboveground Storage Tanks (AST)</li> <li>• State Release facilities (Release)</li> <li>• State Institutional Control/Engineering Control Registry (INST CONTROL)</li> <li>• State MA Spills</li> <li>• Drycleaners</li> <li>• RCRA – NonGen/NLR</li> </ul>

Numerous underground storage tanks that have had reported releases were historically located along the Connecticut pipeline segments. Therefore, petroleum hydrocarbon-impacted soils may be encountered during pipeline construction activities. Several industrial facilities with documented releases are also located in the vicinity of the Connecticut pipeline segments. Contaminants at these properties may include VOCs, petroleum hydrocarbons, metals, and/or other industrial chemicals. Algonquin identified one site that warrants the potential for field sampling. The site is located about 200 feet north of MP 8.6 along the E-1 System Lateral Take-up and Relay segment and is referred to as the Collins and Jewel site. The facility is listed multiple times in the Manifest database with listings associated with solvents and heavy metals. The CTDEEP also identified a concern about a second site, the Lightolier property, which is crossed by the E-1 System Lateral Take-up and Relay segment at about the same location. This site was found on multiple database searches and is listed for chlorinated VOCs and heavy metals.

Numerous filling stations and commercial properties that currently store or have historically stored petroleum are located along the West Roxbury Lateral in Massachusetts, many of which have had reported releases. The urban nature of the area suggests that fill materials were likely used to level ground surfaces during urban development. Therefore, it is possible that urban fill soils containing polycyclic aromatic hydrocarbons, metals, and petroleum hydrocarbons and other petroleum-related constituents may be encountered within the pipeline construction workspace due to the urban nature of the pipeline segment. One site was identified that warranted the potential for field sampling. The site is located adjacent to the West Roxbury Lateral at MP 2.2. According to the database search, residual concentrations of total petroleum hydrocarbons remain in the soil near the limits of the property at concentrations above Method 1 S-1 cleanup standards.

Several industrial facilities with documented releases are also located in the vicinity of the existing and proposed M&R stations in New York, Connecticut, and Massachusetts. However, most of these facilities are located far enough away that they would not impact soil conditions at the M&R stations. The one exception is the Mystic M&R Station in Massachusetts, where polycyclic aromatic hydrocarbons, metals, and/or cyanide have been detected in the soils based on past reports. No listed release sites were identified that would impact soils at the compressor stations.

#### **4.2.2 General Impacts and Mitigation**

Construction activities, such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment, along the right-of-way may affect soil resources. Clearing removes protective vegetative cover and exposes the soil to the effects of wind and rain, which increases the potential for soil erosion and sedimentation of sensitive areas. Grading, spoil storage, and equipment traffic can compact soil, reducing porosity and increasing runoff potential. Excess rock or fill material brought to the surface during trenching operations could hinder the restoration of the right-of-way.

The majority of the proposed facilities would be located within or along existing utility rights-of-way to the maximum extent feasible. Utilizing existing rights-of-way would limit new soil disturbance by working within previously developed or disturbed soils and minimize land use change. To further reduce the impacts of construction on soils, Algonquin would implement its E&SCP, which incorporates all of the applicable mitigation measures outlined in the FERC Plan (FERC, 2013a) and the majority of the measures outlined in the FERC Procedures (FERC, 2013b). The E&SCP has been designed for use by Algonquin and its contractors as a guidance manual for minimizing soil disturbance and transportation of sediments off the right-of-way or into sensitive resources (wetlands, streams, and residential areas) during natural gas pipeline construction. The procedures presented in Algonquin's E&SCP represent BMPs and are designed to accommodate varying field conditions while maintaining strict minimum standards for the protection of soil resources and environmentally sensitive areas.

#### **4.2.2.1 Soil Erosion**

Algonquin would implement the measures specified in its E&SCP to avoid or minimize potential impacts due to soil erosion and sedimentation. As outlined in the E&SCP, Algonquin would have an EI monitoring all phases of construction to ensure Project plans are followed and would use erosion control devices and construction practices that would minimize erosion during and after construction. Wetland and waterbody crossings would be designed to minimize erosion. At the end of construction, Algonquin would return surface contours and drainage patterns to as close to original conditions as practicable and reestablish vegetation as soon as possible following final grading. Algonquin would inspect the right-of-way and maintain erosion and sediment controls as necessary until final stabilization is achieved. Once revegetation is satisfactory, temporary erosion control measures would be removed. Significant soil erosion is not expected during or after Project construction.

#### **4.2.2.2 Prime Farmland and Drain Tiles**

Construction activities such as clearing, grading, and equipment movement can result in soil compaction and an increased susceptibility to erosion. The loss of topsoil due to erosion or the mixing of topsoil with the subsoil during construction could result in a loss of soil fertility and impair revegetation.

Drain tiles are subsurface structures used in agricultural areas to improve the productivity of the land by increasing drainage of the soils. Drain tile damage can occur with rutting due to operation of heavy construction equipment in wet soils and excavation of the pipeline trench. Based on field surveys, the proposed Project may cross areas with drain tiles, particularly along the E-1 System Lateral Take-up and Relay in New London County, Connecticut, and along the Line-36A Loop Extension in Hartford and Middlesex Counties, Connecticut. These segments cross active agricultural fields.

Algonquin would implement the following measures for maintaining soil fertility in active agricultural lands temporarily impacted by construction activities:

- segregating up to 12 inches of topsoil to maintain surface horizons with higher organic matter content;
- backfilling rock fragments to only the top of the natural bedrock profile. Excess fragments would be disposed of in an approved manner and would not interfere with agricultural activities;
- testing topsoil and subsoil for compaction at regular intervals. Severely compacted topsoil would be plowed or a green manure such as alfalfa would be planted and plowed to decrease bulk density and improve soil structure; and
- where drain tiles are crossed, maintaining flow to the drainage system during construction. Drain tile systems would be probed beyond the trenchline to determine if any damage occurred beyond the Project excavation area. Any damage to or temporary manipulation of a drain tile system would be repaired to a level of function that meets the original condition.

We conclude that with the implementation of these mitigation measures, impacts on prime farmland and drain tiles would not be significant and would be temporary in nature.

#### **4.2.2.3 Hydric Soils and Compaction Potential**

As discussed in section 4.2.1.1 above, very poorly and poorly drained soils are prone to compaction and structural damage if disturbed due to permanent or frequent saturation at or near the soil surface. Algonquin's E&SCP provides detailed descriptions of wetland and waterbody crossing techniques designed to minimize damage to saturated soils, as well as other soils that may be vulnerable to such damage when wet. Wetland and waterbody construction methods and mitigation are also described in sections 4.3.2 and 4.4.2.

To the extent practicable, Algonquin would avoid construction during periods of heavy rainfall, snowmelt, or unusual soil saturation. Topsoil would be segregated in wetlands and residential areas and then later returned as the surficial layer. Timber mats and low ground pressure machinery would be used to minimize rutting and compaction within saturated wetland soils. Grading to restore natural site contours and repair rutted areas would be completed before final revegetation, seeding, and mulching, which would initiate natural restoration of soil structure and bulk density. Given these measures, that Project activities would not result in significant adverse soil structural damage or compaction. Any impacts on soil structure would be temporary.

#### **4.2.2.4 Post Construction Revegetation**

As described in Algonquin's E&SCP, soils disturbed by the Project would be revegetated using a seed mix composed primarily of grasses, herbaceous plants, and legumes or as specified by landowners. Algonquin would also segregate topsoil, where required, to optimize revegetation potential as described in its E&SCP. The E&SCP guidelines and requirements were developed based on the guidelines and recommendations from the FERC, USACE, FWS, and the NRCS. Appendix B of the E&SCP contains seed mix recommendations.

Soils in the Project area typically exhibit characteristics sufficient for successful revegetation, and where limitations exist, they would easily be overcome by implementing construction and BMP procedures. Standard revegetation measures include fertilizer and pH amendments (except in wetlands), seedbed preparation, use of a proven seed mix, consideration of seasonal constraints, and mulch application. Where necessary, erosion control fabric or matting would be used on steep slopes to ensure that soils successfully revegetate. Algonquin would monitor all disturbed areas for two growing seasons after construction to evaluate revegetation success of the Project area in accordance with the E&SCP. Areas that have not revegetated successfully would be corrected to ensure the right-of-way conditions are similar to the surrounding undisturbed areas. Based on previous experience with revegetation of pipeline facilities, Algonquin does not anticipate significant problems with revegetation. With adherence to the protocols outlined in Algonquin's E&SCP, revegetation should be successful.

#### **4.2.2.5 Shallow Bedrock**

It is anticipated that widespread areas of soils with shallow bedrock would be encountered in the Project area. As a result, Algonquin anticipates that rock excavation and/or rock blasting during construction activities would be necessary. The new West Roxbury Lateral would be located through an area of shallow bedrock, including an area adjacent to the West Roxbury Crushed Stone Quarry.

For the segments of the pipeline that would be replaced, a trench was previously excavated to install the existing pipelines so substantial bedrock removal in these locations is not anticipated. However, it is possible that limited bedrock removal may be required with blasting to widen or deepen the trench to accommodate the installation of the larger diameter replacement pipeline. Rock removal activities are discussed in more detail in section 4.1.6 and in the AIM Project Rock Removal Plan provided as appendix E.

The introduction of subsoil rocks into agricultural topsoil would be minimized by segregating topsoil from trench spoil and replacing topsoil in agricultural areas after cleanup. Algonquin would make diligent efforts to remove excess rock from surficial soils to the extent practicable in cultivated and rotated croplands, hayfields, pastures, residential areas, and at landowner's request in other areas. Algonquin would remove excess rock from surface soils disturbed by construction such that the size, density, and distribution of rock on the construction right-of-way would be similar to adjacent non-right-of-way areas. Algonquin would not remove rocks from backfilled areas, if the rock in the backfill is consistent in size and density with conditions in adjacent undisturbed areas. If bedrock is encountered, Algonquin would take precautions to minimize the mixing of excavated bedrock with backfill and would replace rock in the trench to a level that is not higher than the original bedrock profile. If blasting is required, Algonquin would use the minimum explosive charge necessary to fracture bedrock and minimize shot-rock from leaving the construction right-of-way. Where necessary, excess rock would be hauled off the right-of-way or left on the right-of-way, subject to landowner approval and applicable permit conditions.

In the event that bedrock is encountered within the trench depth in residential or agricultural lands crossed by the Project, several measures to prevent incorporation of rock into the topsoil would be implemented. These measures include topsoil segregation and protection along the trench, rock backfill in residential and agricultural areas only to the top of bedrock, and disposal of excess rock fragments in an approved manner so as to not incorporate rock fragments into topsoil layers. Through adherence to these measures, no significant increase in the rock content of topsoil in residential or agricultural areas is anticipated.

#### **4.2.2.6 Contaminated Soils**

Soil contamination along the proposed Project may result from at least two sources: hazardous material or fuel spills during construction and/or those occurring before construction in pre-existing contaminated areas that are encountered during construction. Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could adversely affect soils. The effects of such contamination are typically minor because of the low frequency and volumes of spills and leaks. Algonquin has developed an acceptable SPCC Plan that specifies cleanup procedures to minimize the potential for soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents. Algonquin and its contractors would use the SPCC Plan to minimize accidental spills of materials that may contaminate soils, and to ensure that inadvertent spills of fuels, lubricants, or solvents are contained, cleaned up, and disposed of as quickly as possible and in an appropriate manner.

To-date, Algonquin has determined that field sampling would be required at two locations prior to construction. The first location is along the E-1 System Lateral Take-up and Relay segment near MP 8.6 (Collins and Jewel site) and the other is along the West Roxbury Lateral Pipeline near MP 2.2. However, the CTDEEP also identified a concern about encountering contamination at a third site near the Lightolier property (also near MP 8.6 along the E-1 System Lateral Take-up and Relay). Although the Collins and Jewel site is located in this same area, it is unclear whether or not sampling would also occur on the Lightolier property. In addition, Algonquin continues to research other locations where sampling may be necessary and has not yet provided details on the protocols for any sampling. Therefore, **we recommend that:**

- **Prior to construction of the AIM Project, Algonquin should file with the Secretary of the Commission (Secretary), for review and written approval of the Director of the Office of Energy Projects (OEP), a Field Sampling Plan for potential contaminated sites that could be encountered during construction. The Field Sampling Plan should include the locations of all proposed sampling, the number of**

**samples to be taken, how and where the samples will be analyzed, the schedule for when the sampling would occur, and the process for providing the results to the applicable agencies.**

In the event that contamination is encountered during construction, Algonquin would implement the protocols in its Unexpected Contamination Encounter Procedures.<sup>1</sup> If contaminated soils are encountered during construction, all personnel would stop work, leave the contaminated area, and notify the chief inspector on site. Additional notifications would then be made including outside agencies if required. Algonquin would implement the following measures to transport and manage excavated soil to designated soil staging areas, characterize the soils for waste disposal, and ensure that all soils are managed in accordance with state and federal regulations:

- limit personnel working within the contamination area during cleanup operations to individuals with current Hazardous Waste Operations and Emergency Response training;
- stockpile material on impermeable sheeting;
- rope off stockpiled area to prevent unauthorized entry; and
- place contaminated material in appropriately labeled and stored containers.

We have reviewed the Unexpected Contamination Encounter Procedures and find it acceptable.

Contamination may be present within surficial soils at locations where a HDD is proposed. Algonquin conducted a review of each of the planned HDD entry/exit locations, including the modified location on the west side of the river, and found no documented soil contamination. Utilizing the HDD method avoids disturbance to river-bottom sediments because all subsurface materials removed along the drill path during the drilling process are removed from the bore hole and contained within temporary lined mud pits. Contamination is not expected to be encountered during HDD activities; however, due to the historic presence of PCBs in the area, we **recommend that:**

- **All subsurface materials recovered from the Hudson River HDD process should be appropriately sampled for PCBs prior to disposal of the material. If contamination is found, it should be handled as outlined in the Unanticipated Contamination Encounter Procedures.**

## **4.3 WATER RESOURCES**

### **4.3.1 Groundwater Resources**

#### **4.3.1.1 Existing Groundwater Resources**

Groundwater resources in the Project area are composed of unconsolidated glacial deposits of sand and gravel underlain by consolidated bedrock aquifer systems. The three main consolidated bedrock aquifer types are carbonate rock, crystalline rock, and sandstone (Olcott, 1995). Carbonate rock aquifers are predominately located in the Project area in eastern New York and western Connecticut. Carbonate rock aquifers are composed primarily of limestone, dolomite, and marble, and are characterized by

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<sup>1</sup> Algonquin's Unexpected Contamination Encounter Procedures was provided as part of its responses to the April 10, 2014 FERC Environmental Data Request filed on April 30, 2014 (Accession No. 20140430-5528). The Unexpected Contamination Encounter Procedures can be viewed on the FERC website at <http://www.ferc.gov>. Using the "eLibrary" link, select "Advanced Search" from the eLibrary menu and enter 20140430-5528 in the "Numbers: Accession Number" field.

dissolution by slightly acidic groundwater that enlarges pre-existing openings such as pores, joints, and fractures (Miller, 1999). Water from these aquifers is generally very hard and slightly alkaline (Olcott, 1995). Wells in carbonate-rock aquifers generally yield 10 to 30 gallons per minute (gpm). Yields can be larger or smaller, however, depending on the degree of fracturing and the number, size, and interconnection of dissolution features in the rock. For example, yields of as much as 1,000 gpm have been reported in some wells in carbonate-rock aquifers with numerous dissolution openings (Olcott, 1995).

All of the existing and proposed Project facilities in Rhode Island and Massachusetts, and a majority of the facilities in Connecticut, would be located within crystalline-rock aquifers. Crystalline-rock aquifers are formed of igneous and metamorphic rocks, and water transmission through this type of substrate is very low and the volume of water storage capacity is generally small (Olcott, 1995). As a result, groundwater movement through these rock types is dependent on the presence of secondary openings such as fractures or joints in the rocks (Olcott, 1995; Melvin et al., 1988). Water that is stored in overlying glacial deposits or water in nearby streams or other surface waterbodies is commonly connected hydraulically with the bedrock fracture system and can provide large quantities of water. The common range of well yields is 1 to 25 gpm; however, some wells may exceed 100 to 500 gpm (Olcott, 1995). Groundwater quality in the crystalline-rock aquifer system is generally suitable for most uses because the rock is composed of nearly insoluble minerals, groundwater is in contact with relatively small surface areas within the joints and fractures, and within the upper part of the system water movement through the joints and fractures is generally rapid and along short flow paths (Olcott, 1995). In some areas, excessive concentrations of iron, manganese, and sulfate are present (Olcott, 1995). Elevated concentrations of radon, a radioactive gas, have been reported in water from the crystalline-rock aquifers in all of the New England States except Vermont (Olcott, 1995).

Two pipeline segments and some Project facilities are located over sandstone aquifers in New York and Connecticut. The sandstones are productive aquifers with well yields ranging from 50 to 100 gpm. Water in these aquifers generally is confined (Olcott, 1995). The sandstone aquifers in the Project area are characterized by fracture permeability. Water in the upper 200 to 300 feet of the aquifer is moderately hard and slightly alkaline (Olcott, 1995).

Surficial aquifers are scattered throughout New York, Connecticut, Massachusetts, and Rhode Island. A majority of the surficial aquifers along the Project area are present from central Connecticut to Massachusetts. The surficial aquifer system consists of glacial deposits of sand and gravel that were deposited during several advances and retreats of continental glaciers. These deposits make up the regional surficial aquifer system, which is the most productive and widely used aquifer in the region (Olcott, 1995).

#### **4.3.1.2 Sole Source Aquifers**

The EPA defines a sole or principal source aquifer (SSA) area as one that supplies greater than 50 percent of drinking water for an area, where contamination of the aquifer could create a significant hazard to public health, and where there are no alternative water sources that could reasonably be expected to replace the water supplied by the aquifer (EPA, 1992). According to the EPA's designated SSA maps for the Project area (EPA, 1992), the majority of the Project facilities are not located within a designated SSA. However, one designated SSA (the Ramapo River Basin Aquifer System) would be crossed by the Haverstraw to Stony Point Take-up and Relay segment in New York. The pipeline segment would cross about 0.5 mile of the Ramapo River Basin Aquifer System near the northern edge of the SSA between MPs 0.0 and 0.5.

The Ramapo River Basin Aquifer System is located in Bergen and Passaic Counties, New Jersey and Orange and Rockland Counties, New York. The area is underlain primarily by Precambrian



metamorphic rocks; Triassic-age sedimentary bedrock; unconsolidated Quaternary-age, glacial outwash deposits; and more recent alluvial deposits. This aquifer system supplies about 57 percent of the population with drinking water within the SSA, including the Towns of Haverstraw and Stony Point (EPA, 1992).

#### **4.3.1.3 State-designated Aquifers**

In addition to the EPA-designated SSA program, individual states may enact regulations protecting significant aquifer recharge areas, critical areas where excessive use of groundwater poses a threat to the long-term integrity of a water-supply source, or preservation areas to protect natural resources including public water supply sources. State-designated aquifers are discussed further below.

The NYSDEC designates highly productive aquifers presently being utilized as sources of water supply by municipal water supply systems as Primary Water Supply Aquifers (Primary Aquifer) (1990). The only Primary Aquifer crossed by the Project in New York is the Ramapo River Basin Aquifer System. This aquifer comprises valley-fill deposits consisting of alluvial silt and sand, glacial outwash (sand and gravel), ice-contact sand and gravel, till, and lacustrine silt and clay. The sand and gravel beds have relatively high permeability, whereas the till, silt, and clay deposits have relatively low permeability. Water table conditions prevail in the shallow sand and gravel aquifers in parts of the Mahwah River valley. Confined and semi-confined conditions prevail in sand and gravel buried under silt and clay and till in parts of the Mahwah valley. The aquifer is recharged throughout, where the land surface is most permeable and is greatest along the margin of the valley, where runoff from the hillsides is concentrated (Moore et al., 1982).

Connecticut Water Quality Standards provide a groundwater quality classification scheme that differentiates groundwater by designated use and discharge restrictions that are applied across the entire state (CTDEEP, 2013o). The proposed Project is located primarily within groundwater quality class GA. The GA designation indicates groundwater within the designated area is used for existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically connected surface waters (CTDEEP, 2013r).

The most productive aquifers in Rhode Island are located in areas of glacial deposits of stratified drift, though the fractured bedrock throughout the state serves as an important aquifer to many public and private wells. RIDEM reports that about 26 percent of the population in Rhode Island relies on groundwater from public and private wells throughout roughly two-thirds of the state's municipalities (RIDEM, 2013a). The Burrillville Compressor Station in Rhode Island is not located within any significant state aquifer system.

The MADEP defines a Potentially Productive Aquifer as any aquifer delineated by the USGS to have either medium or high yield (Massachusetts Office of Geographic Information Systems [MassGIS], 2012). The West Roxbury Lateral crosses a portion of the Charles River Basin, a state-designated aquifer, from MPs 1.8 to 2.9. This portion of the aquifer is designated as a medium yield aquifer. In addition, Algonquin's existing Wellesley M&R Station is located within the Charles River Basin aquifer where it is designated as a high yield aquifer (MassGIS, 2013a).

#### **4.3.1.4 Wellhead and Aquifer Protection Areas**

Under the Safe Drinking Water Act (SDWA), each state is required to develop and implement a Wellhead Protection Program in order to identify the land and recharge areas contributing to public supply wells, and prevent the contamination of drinking water supplies. The SDWA was updated in 1996 with an amendment requiring the development of a broader-based Source Water Assessment Program

(SWAP), which includes the assessment of potential contamination to both groundwater and surface water through a watershed approach.

The Wellhead Protection Program in New York is administered by the New York State Department of Health (NYSDOH) as part of the SWAP. The SWAP provides information on potential threat of contamination to both groundwater and surface water sources that supply New York's public drinking water systems. Algonquin contacted the NYSDOH to obtain information regarding the presence of WHPAs in the Project area in New York (NYSDOH, 2013a). The Project facilities in New York are not located within any state-designated well head protection zones.

The CTDEEP refers to WHPAs as Aquifer Protection Areas (APA). The APA Program protects major public water supply wells in sand and gravel aquifers to ensure a plentiful supply of public drinking water for present and future generations (CTDEEP, 2013g). The APAs are delineated by the individual water companies owning the well fields and approved by the CTDEEP. The Project facilities in Connecticut cross three state-designated APAs. Algonquin's proposed Line-36A Loop Extension in Cromwell crosses one state-designated APA between MPs 1.4 and 2.0. Algonquin's Southeast to MLV-19 Take-up and Relay segment crosses a second state-designated APA between MPs 2.3 and 2.6 in the City of Danbury. Algonquin's existing Farmington M&R Station is located within a state-designated APA.

Groundwater in Rhode Island is generally free of pollutants and over 90 percent of the state is classified as suitable for drinking water use without treatment (RIDEM, 2013a). The state's groundwater resources are considered vulnerable to contamination because of the generally shallow depth to groundwater, aquifer permeability and the absence of subsurface confining layers. RIDEM has designated wellhead protection areas for all 665 public wells in Rhode Island identified as of January 2009 (RIDEM, 2013a). The existing Burrillville Compressor Station in Rhode Island is not located within any state-designated wellhead protection areas.

The MADEP requires public water utilities to protect Zone II recharge areas with municipal bylaws, ordinances, and/or health regulations. If the Zone II area is outside a public water system's municipality, the municipalities where the Zone II area is located must demonstrate to the MADEP that best efforts are being made to protect the Zone II area (MADEP, 2013a). Algonquin's existing Brockton M&R Station is the only Project facility located within a state-designated wellhead protection area.

#### **4.3.1.5 Water Supply Wells and Springs**

To obtain information on water supply wells and springs within the Project area, data were reviewed from the NYSDEC Water Well Information Search Wizard (NYSDEC, 2013c); CTDEEP's geospatial data for public supply wells in designated APAs (CTDEEP, 2013g); GIS data provided by the Connecticut Department of Public Health (Connecticut Department of Public Health, 2013); and the MADEP's Water Quality Testing System (MassGIS, 2013b). Additional information was also requested from the NYSDOH regarding the locations of public water supply wells and springs within 150 feet of the Project. Information on the locations of private wells and springs from landowners along the Project route was also collected. Based on available information, 89 private domestic wells, 1 public well, and no springs were identified within 150 feet of the construction work area for the Project (see table 4.3.1-1).

In addition to these features, the proposed Stony Point to Yorktown Take-up and Relay segment crosses the Catskill Aqueduct near MP 10.3 and the Cortlandt M&R Station. Additional discussion of the crossing of this aqueduct is provided in section 4.3.2.1.

TABLE 4.3.1-1

Water Supply Wells and Springs Within 150 Feet of the Construction Work Area for the AIM Project

Facility/Municipality, State	Supply Type	Approximate MP <sup>a</sup>	Approximate Distance from Pipeline (feet)	Approximate Distance from Construction Work Area (feet)	Direction from Construction Work Area
<b>PIPELINE FACILITIES</b>					
<b>Replacement Pipeline</b>					
Haverstraw to Stony Point Take-up and Relay					
Haverstraw, NY	Public, Community	1.1	125	100	NW
	Domestic	1.1	175	150	SE
Stony Point, NY	Domestic	1.1	150	125	NW
	Domestic	1.4	200	125	NW
	Domestic	1.6	100	25	NW
	Domestic	1.6	75	25	NW
	Domestic	1.7	150	75	NW
	Domestic	2.5	150	100	NW
	Domestic	2.5	100	150	NW
	Domestic	2.6	200	150	NW
	Domestic	2.6	200	150	NW
	Domestic	2.6	175	125	NW
	Domestic	2.7	175	125	N
	Domestic	2.7	100	75	N
	Domestic	2.7	225	150	N
	Domestic	2.8	225	150	NW
	Domestic	2.8	225	150	NW
	Domestic	2.8	225	150	NW
	Domestic	2.9	225	125	NW
	Domestic	2.9	225	125	NW
	Domestic	2.9	100	25	NW
Stony Point to Yorktown Take-up and Relay					
Stony Point, NY	Domestic	0.2	102	67	SE
	Domestic	0.4	61	11	SE
	Domestic	0.4	102	56	NW
	Domestic	0.5	169	144	NW
	Domestic	0.5	222	89	SE
	Domestic	1.4	144	89	SE
	Domestic	1.5	172	122	SE
	Domestic	1.7	178	89	SE
	Domestic	1.7	64	39	NW
	Domestic	2.0	122	72	NW
	Domestic	2.2	44	64	NW
	Domestic	2.2	125	50	S
	Domestic	2.2	133	158	NW
	Domestic	2.3	59	39	N
	Domestic	2.4	72	20	S
	Domestic	2.4	194	150	SE

TABLE 4.3.1-1 (cont'd)

## Water Supply Wells and Springs Within 150 Feet of the Construction Work Area for the AIM Project

Facility/Municipality, State	Supply Type	Approximate MP <sup>a</sup>	Approximate Distance from Pipeline (feet)	Approximate Distance from Construction Work Area (feet)	Direction from Construction Work Area
Southeast to MLV 19 Take-up and Relay Danbury, CT	Domestic	2.4	69	44	NW
	Domestic	2.4	132	77	S
	Domestic	2.5	>150	150	N
	Domestic	2.5	>125	125	NE
	Domestic	2.5	>100	100	W
	Domestic	2.9	>100	100	SW
	Domestic	2.0	160	120	NW
	Domestic	2.3	300	160	NW
	Domestic	2.4	100	50	N
	Domestic	2.4	110	40	N
	Domestic	2.5	85	65	SE
	Domestic	3.2	233	150	NW
	Domestic	3.2	110	30	NW
	Domestic	3.2	110	33	NW
	Domestic	3.4	111	55	NW
	Domestic	3.4	28	0	NW
	Domestic	3.4	177	122	NW
	Domestic	3.4	166	95	NW
	Domestic	3.4	100	15	NW
	Domestic	3.4	100	20	NW
	Domestic	3.4	110	60	SE
	Domestic	3.5	118	62	SE
	Domestic	3.5	200	150	NW
	Domestic	3.5	110	55	NW
	Domestic	3.8	160	55	NW
	Domestic	3.8	150	88	NW
	Domestic	3.9	123	66	NW
	Domestic	3.8	125	90	SE
	Domestic	3.9	50	5	NW
	Domestic	3.9	144	55	SE
	Domestic	3.9	172	121	NW
	Domestic	4.0	168	150	NW
	Domestic	4.0	200	150	NW
	Domestic	4.0	134	77	NW
	Domestic	4.0	77	28	NW
	Domestic	4.2	94	60	SE
	Domestic	4.3	150	84	N
	Domestic	4.3	126	111	SE
	Domestic	4.3	150	117	N
	Domestic	4.4	117	55	S

TABLE 4.3.1-1 (cont'd)					
Water Supply Wells and Springs Within 150 Feet of the Construction Work Area for the AIM Project					
Facility/Municipality, State	Supply Type	Approximate MP <sup>a</sup>	Approximate Distance from Pipeline (feet)	Approximate Distance from Construction Work Area (feet)	Direction from Construction Work Area
	Domestic	4.4	95	55	N
	Domestic	4.4	227	18	N
	Domestic	4.4	194	150	N
E-1 System Lateral Take-up and Relay					
Lebanon, CT	Domestic	0.0	165	15	SW
Franklin, CT	Domestic	5.9	100	30	NE
	Domestic	7.3	80	0	SW
E-1 System Lateral Loop Extension					
Montville, CT	Domestic	0.0	152	100	NE
	Domestic	0.0	170	140	W
	Domestic	0.1	30	25	W
	Domestic	0.2	128	98	W
	Domestic	1.3	73	35	W
	Domestic	1.3	182	150	SW
<b>ABOVEGROUND FACILITIES</b>					
E-1 12-inch Loop Receiver Facility					
Montville, CT	Domestic	0.0	152	100	NE

#### 4.3.1.6 Potential Contaminated Groundwater

As discussed in section 4.2.1.5, Algonquin conducted a corridor database search using EDR to identify various facilities with potential and/or actual sources of contamination that may impact nearby groundwater along the existing and proposed pipeline and aboveground facilities in New York, Connecticut, and Massachusetts. Rhode Island was not included in the search, because only one facility (Burrillville Compressor Station) would require work and that activity would take place within Algonquin's existing facility. A list of databases searched is included in table 4.2.1-5. Algonquin reviewed the sites located within 500 feet of Project facilities to evaluate their distance from and hydrologic setting relative to Project areas (i.e., whether up-gradient, down-gradient, or cross-gradient) and their current regulatory status (i.e., whether available documentation indicates the continued presence of contamination). Information on the documented sites that were determined to potentially affect construction of the pipeline segments and aboveground facilities is provided in section 4.2.1.5. To-date, Algonquin has indicated that there are only two sites within the Project area in Connecticut and Massachusetts where groundwater contamination could be encountered during construction (table 4.3.1-2).

TABLE 4.3.1-2

**Potential Contaminated Groundwater Sites Crossed by the Pipeline Route for the AIM Project<sup>a</sup>**

State/Segment/Site Name	MP	Distance/Direction from Right-of-Way	Contaminants
<b>PIPELINE FACILITIES</b>			
<b>Connecticut</b>			
E-1 System Lateral Take-up and Relay Collins & Jewel	8.6	~200 feet north	Solvents and heavy metals.
<b>Massachusetts</b>			
West Roxbury Lateral Pipeline 580 Providence Hwy, Dedham, MA	2.2	Adjacent	Petroleum hydrocarbons. Gasoline in soils.
<sup>a</sup> Due to the extensive number of releases in this pipeline corridor, those releases that have achieved permanent regulatory closure without use limitations were not evaluated in this review, unless located in the immediate vicinity of the pipeline. In addition, those listings greater than 1,000 feet from the pipeline were excluded from this review. It should be anticipated that urban fill soils containing polycyclic aromatic hydrocarbons, metals, and petroleum hydrocarbons would be encountered throughout the corridor due to the urban nature of the pipeline segment.			

Numerous residential petroleum storage tanks and commercial filling stations that currently store or have historically stored petroleum are located along the Stony Point to Yorktown Take-up and Relay segment and have had reported releases. However, most of the Project facilities are located in a presumed down- or cross-gradient direction, or are considered to be located at a great enough distance away from the release sites that those releases are unlikely to impact groundwater beneath the pipeline segments in New York. Based on review of additional site information, there are no sites in New York that would require field sampling investigations.

We received a scoping comment related to existing groundwater contamination at the IPEC. In 2005, Entergy Nuclear Operations, Inc. (Entergy), the IPEC operator, discovered water leaking from a crack in the exterior of the Unit 2 spent fuel pool. Following the report of the leak to the NYSDEC and the Nuclear Regulatory Commission (NRC), Entergy conducted an investigation, supervised by NYSDEC and NYSDOH staff, to evaluate the leak and assess potential environmental effects. The investigation identified a plume of tritium (radioactive hydrogen) contamination in groundwater coming from the Unit 2 spent fuel pool and a plume of strontium-90 contamination associated with the Unit 1 spent fuel pool complex. In addition to the radioactive hydrogen and strontium-90, three other radionuclides (Nickel-63, Cobalt-60, and Cesium-137) were also sporadically detected during the groundwater monitoring study, but were isolated to specific locations within the IPEC site. Hydrogeological analysis of the plumes and groundwater movement at the site demonstrated that groundwater from the site flows east to west, directly toward and into the Hudson River; groundwater does not flow off site to the north, south, or east (NYSDEC, 2014d, 2014b; NRC, 2014a).

The proposed Project facilities near the IPEC would be located south and east of the IPEC site. The closest point of the proposed workspace to the IPEC site would be about 1,560 southeast of the security fence. The proposed workspace would be more than 2,300 feet southeast of the mapped plumes of strontium-90 and radioactive hydrogen contaminated groundwater. As noted above, groundwater flow at the IPEC site moves westward toward and into the Hudson River; there is no flow of contaminated groundwater off site to the south, east, or north. As a result, the proposed Project facilities would not interact with radiologically contaminated groundwater at the IPEC site.

Numerous releases at underground storage tanks or industrial facilities have been reported within 1 mile of the pipeline route and aboveground facilities in Connecticut. However, most of the Project

facilities are located in a presumed down- or cross-gradient direction, or are located at a great enough distance from the Project, that those releases would be unlikely to impact groundwater beneath the pipeline segments in Connecticut. Based on review of additional site information, Algonquin would undertake field sampling investigations at the Collins and Jewel site at MP 8.6 of the E-1 System Lateral Take-up and Relay segment in Connecticut. However, the CTDEEP also identified a concern about encountering contaminated groundwater near the Lightolier property (near MP 8.6). Although the Collins and Jewel site is located in this same area, it is unclear whether or not sampling would also occur on the Lightolier property itself. Therefore, we have recommended that Algonquin develop a Field Sampling Plan that includes the locations of all proposed sampling as well as proposed sampling protocols (see section 4.2.2.6).

Numerous filling stations and commercial properties that currently store, or have historically stored, petroleum are located along the West Roxbury Lateral pipeline. The EDR report indicates that many of these properties have had reported releases. Additionally, the urban nature of the area suggests that fill materials were likely used to level ground surfaces during urban development. Therefore, it is anticipated that groundwater may be impacted by contaminants such as polycyclic aromatic hydrocarbons, metals, and petroleum hydrocarbons throughout the pipeline corridor. However, based on the average depth to groundwater (i.e., 10 to 15 feet below ground surface), groundwater is not expected to be encountered in the majority of the corridor during pipeline construction activities. Therefore, the majority of release sites in the vicinity of the pipeline corridor are not expected to impact pipeline construction with respect to groundwater contamination. Based on review of additional site information, Algonquin has indicated it would undertake field sampling investigations at one site along the proposed West Roxbury Lateral pipeline in Massachusetts (MP 2.2 in Dedham). As discussed above, we have recommended that Algonquin develop a Field Sampling Plan that includes the locations of all proposed sampling as well as proposed sampling protocols (see section 4.2.2.6).

#### **4.3.1.7 General Impacts and Mitigation**

Project construction activities with the potential to impact groundwater include trench dewatering, blasting, spills or leaks of hazardous materials, and HDD. Shallow aquifers could sustain minor, indirect impacts from changes in overland sheet flow and recharge caused by clearing and grading of the proposed right-of-way. Near surface soil compaction caused by heavy construction equipment could reduce the ability of soils to absorb water in isolated areas. Aboveground facilities could add minor impervious surfaces; however, they are unlikely to affect groundwater recharge outside of the facility limits. Local water table elevations could be affected by trenching and backfilling. These minor impacts would be temporary and would not significantly affect groundwater resources. Upon completion of construction, Algonquin would restore the ground surface as closely as practicable to original contours and revegetate the right-of-way to ensure restoration of preconstruction overland flow and recharge patterns.

In areas where groundwater is near the surface, trench excavation may intersect the water table in low-lying areas. Dewatering of trenches may result in temporary fluctuations in local groundwater levels. Trench water would be discharged into well-vegetated upland areas to allow infiltration and to minimize impacts on the water table. These potential impacts would be avoided or further minimized by use of construction techniques described in Algonquin's E&SCP, such as the use of temporary and permanent trench plugs and interceptor dikes. After installation of the proposed pipeline and aboveground facilities, the ground surface would be restored as close as possible to original contours and any exposed soils would be revegetated to ensure restoration of preconstruction overland flow and recharge patterns. Therefore, these minor, direct, and indirect impacts would be temporary and would not significantly affect groundwater resources.



Public and private water supply wells within 150 feet of the Project could be impacted by construction activities, including areas where blasting of bedrock would be required. These affects would be monitored and would be minimized by following the procedures outlined in Algonquin's Rock Removal Plan (see appendix E), which we find acceptable. Two wells are located within the construction workspace. Both would be protected by safety fencing during construction. Algonquin would contact any landowner with water supply wells within 150 feet of the construction workspace and offer to conduct pre- and post-construction monitoring of well yield and water quality. If a water supply well is damaged as a result of Project construction, Algonquin would ensure that a temporary source of water is provided until the damaged water well is restored to its preconstruction capacity and quality, a replacement water source would be provided, or the landowner would be fairly compensated for damages. Given the number of water supply wells within 150 feet of the construction workspace associated with the Project facilities, **we recommend that:**

- **Within 30 days of placing the AIM Project facilities in service, Algonquin should file with the Secretary a report discussing whether any water supply well complaints concerning well yield or quality were received and how each was resolved.**

Unconfined aquifers and shallow groundwater areas could be vulnerable to contamination caused by inadvertent surface spills of hazardous materials used during construction. Accidental spills and leaks associated with refueling or storage of fuel, oil, or other fluids pose the greatest risk to groundwater resources. If not cleaned up, contaminated soil could continue to leach and add pollutants to groundwater long after a spill has occurred. Impacts associated with spills or leaks of hazardous liquids would be avoided or minimized by restricting the location of refueling and storage facilities and by requiring cleanup in the event of a spill or leak.

Implementation of the measures in Algonquin's SPCC Plan would minimize the potential for groundwater impacts associated with an inadvertent spill of hazardous materials. The SPCC Plan identifies preventive measures to reduce the likelihood of a spill, such as secondary containment for petroleum products, daily equipment inspections for leaks, and restrictions on the transport of potentially hazardous materials to the construction work areas. The SPCC plan also specifies measures to contain and clean up a spill should one occur. The plan includes measures for employee training regarding the on-site handling of fuels and other hazardous materials; as well as requirements to prevent and minimize the potential for spills, including:

- Project equipment must be in good operating order and subject to regular inspection.
- Transport of fuels would only be conducted on approved access roads.
- All equipment would be parked overnight and/or fueled at least 100 feet from a wetland or waterbody.
- Hazardous materials, including chemicals, fuels, and lubricating oils, would not be stored within 100 feet of a wetland or waterbody.
- Any concrete coating activities would not be performed within 100 feet of a waterbody or wetland.

In the event of a spill, the Project contractor would have sufficient supplies of absorbent and barrier materials on site to allow for the rapid containment and recovery of spilled material. Implementation of Algonquin's SPCC Plan would adequately address the storage and transfer of

hazardous materials and petroleum products. Therefore, we find the potential for the Project to contaminate local aquifers or water supply wells would be minimal.

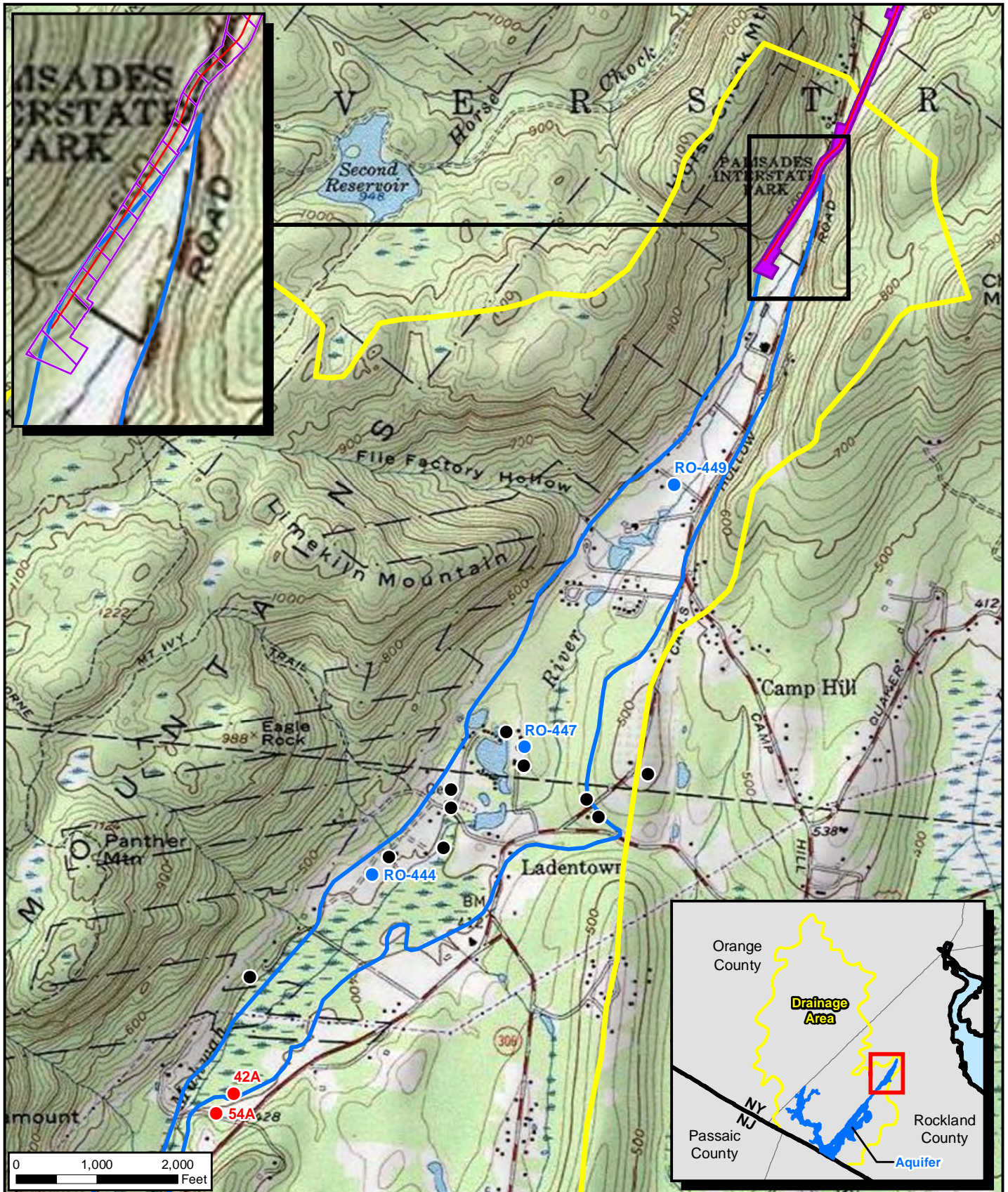
Impacts associated with unexpected contaminated groundwater would be avoided or minimized by following the procedures outlined in Algonquin's Unexpected Contamination Encounter Procedures, which we find to be acceptable. Contractors would be trained to assess any potential contamination by assessing the Project and surrounding area and/or past history of the site. Should contamination be encountered, sampling would be conducted and appropriate cleanup measures would be undertaken. Work would continue only after appropriate cleanup has occurred. By implementing the measures included in the Unexpected Contamination Encounter Plan, the potential impacts on soils and groundwater due to construction activities would be minimized.

Contamination may be present within shallow groundwater at locations where a HDD is proposed. Algonquin conducted a review of each of the planned HDD entry/exit locations and found no documented groundwater contamination. Algonquin also consulted with the landowner of the property where the modified entry/exit hole for the HDD crossing on the west side of the Hudson River is being proposed. The landowner indicated that they were not aware of any contamination on the site. Therefore, contamination is not expected to be encountered during HDD activities. However, due to the historic presence of PCBs in the area, we are recommending that all subsurface materials recovered from the Hudson River HDD process be appropriately sampled for PCBs prior to disposal of the material. If contamination is found, it should be handled as outlined in the Unanticipated Contamination Encounter Procedures (see section 4.2.2.6).

Algonquin would employ several EIs to ensure compliance with the E&SCP, SPCC Plan, the Unexpected Contamination Encounter Plan, and other Project-specific plans and specifications during construction and restoration. The EI(s) would have the authority to stop work and order corrective actions for activities that violate the environmental conditions of the FERC Certificate and other authorizations. The EI would be required to report such spills to all local, state, and federal agencies and conduct follow-up delineation (if necessary) and cleanup of a spill, as required, including the appropriate characterization and disposal of wastes generated.

Comments were received on the draft EIS regarding the Ramapo River Basin Aquifer Systems and potential impacts on the aquifer associated with Project construction. The Ramapo River drainage basin occupies an area of 161 square miles (103,040 acres) covering the Ramapo and Mahwah Rivers in New York and New Jersey. The EPA-designated sole source aquifer coincides with the Ramapo River drainage basin (EPA, 1992). Seventy percent of the basin is in New York and covers portions of Orange and Rockland counties. The valley-fill aquifer itself occupies a much smaller portion of the drainage basin and is associated with the Ramapo and Mahwah River valleys (see figure 4.3.1-1). AIM Project construction within the drainage basin would take place in Rockland County and occupy only 6.4 acres over 0.5 linear mile, or just 0.007 percent of the area covered by the drainage basin. The actual construction footprint that could potentially impact the aquifer itself occupies only 2.4 acres. The construction footprint would be located within the headwaters of the Mahwah River, at the northern margin of the aquifer (see figure 4.3.1-1). The thickness of the valley-fill aquifer in this area is minimal, ranging from 20 to 40 feet (Moore et al., 1982; Plate 1). Based on published data (Hesig, 2010) the closest public water supply wells within the aquifer (United Water, New York) are located about 2.3 miles south of the southern edge of the Project workspace (see figure 4.3.1-1). The closest private well in the aquifer is located about 2,120 feet south of the Project workspace (RO-449 on figure 4.3.1-1).





**Figure 4.3.1-1**  
**AIM Project**  
Ramapo River Basin Aquifer Systems  
Rockland County, New York



The proposed construction in this portion of the Project involves replacing the existing 26-inch-diameter pipeline with a new 42-inch-diameter pipe in the same trench. The existing 26-inch-diameter pipeline would be removed, and the existing ditch would be widened and deepened to accommodate the new 42-inch-diameter pipe. Following the installation of the new pipe, the trench would be backfilled, and the land surface would be restored to preconstruction contours. The greatest potential for impacts on groundwater during construction would be an accidental release of a hazardous substance, such as fuel, lubricants, or coolant. However, the potential for contaminating the aquifer is considered to be low due to the unlikely occurrence of large spills, the small volume of hazardous materials expected to be used during the Project, and the timeframe in which spills would be contained and removed. In the event of a spill during construction, the Project SPCC Plan would be implemented as described above.

Operation of the Project would not be expected to result in impacts on groundwater unless maintenance activities involving pipe excavation and repair are required. For maintenance activities, Algonquin would implement its operational SPCC Plan to contain and clean up spilled materials. As a result, any impacts from maintenance would be short term in nature and similar to those discussed for initial pipeline construction.

In summary, construction activities are not likely to significantly impact groundwater resources because the majority of construction would involve shallow, temporary, and localized excavation. Because Project disturbances would generally be temporary and limited to the ground surface and shallow excavation, erosion controls and stormwater management would be implemented, and natural ground contours and vegetation would be restored, we conclude that construction and operation of the Project would not result in significant impacts on groundwater resources or users of groundwater in the Project area.

#### **4.3.1.8 Groundwater Uses During Construction**

As discussed in sections 2.3.1.2 and 4.3.2.3, Algonquin would use the HDD intersect method at two locations along the proposed pipeline route. This intersect method involves drilling from both sides of the waterbody and intersecting in the middle. This method allows the exact drill entry and exit locations to be predetermined. This process also enables the drilling path to have an instant hydraulic connection once the intersect is complete providing for a cleaner pilot hole. The installation is a multi-stage process consisting of establishing a small diameter pilot hole followed by enlargement of the pilot hole through successive reaming passes until the hole is large enough to accommodate the pipe. Throughout the process of drilling, a slurry made of non-toxic/non-hazardous bentonite clay, additives, and water, referred to as drilling mud, would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and hold the hole open. Algonquin is proposing to use municipal sources of water for the HDD operations. The estimated requirements for each of the proposed HDDs are listed in table 4.3.1-3.

During the HDD installation, the drilling mud returns would be circulated through mud pits to remove the drill cuttings and the bentonite would be recycled for use as the drilling operation continues. After completion of the HDD operations, the recovered drilling mud would be recycled or disposed of at an approved disposal site and would not be expected to impact water resources. As stated in section 4.2.2.6, due to the historic presence of PCB contamination, we are recommending that all subsurface materials recovered from the Hudson River HDD process be appropriately sampled for PCBs prior to disposal of the material. If contamination is found it would be handled as outlined in the Unanticipated Contamination Encounter Procedures.

TABLE 4.3.1-3			
Estimated Fresh Water Usage for Horizontal Directional Drills for the AIM Project			
HDD	MP	Maximum Estimated Volume (gallons)	Water Source
<b>New York</b>			
42-inch-diameter Hudson River HDD	3.0 to 3.9	800,000	Municipal
<b>Connecticut</b>			
42-inch-diameter Interstate 84/Still River HDD	1.4 to 2.1	2,000,000	Municipal
<b>TOTAL</b>		<b>2,800,000</b>	

## 4.3.2 Surface Water Resources

### 4.3.2.1 Existing Surface Water Resources

Surface water resources were initially identified using USGS topographic maps and subsequently surveyed during wetland field delineations conducted in 2013. In areas where access was not granted, environmental information was determined using USGS mapping, aerial imagery, and other GIS-based information. Table I-1 in appendix I lists the waterbodies that would be crossed by name, location, crossing width, flow type, FERC classification, fishery type, state water quality classification, and proposed crossing method. A total of 102 waterbody crossings would be required for the Project. These include 36 perennial streams, 62 intermittent streams, 3 ephemeral streams, and 1 ponded area.

### Pipeline Facilities

The New York portion of the Project crosses 39 waterbodies within 8 subbasin level watersheds in Rockland, Westchester, and Putnam Counties. Of these 39 waterbodies, 20 are perennial streams and 19 are intermittent streams. The Hudson River is the only major waterbody (greater than 100 feet wide) crossed by the pipeline segments. Six of the proposed crossings are intermediate crossings (between 10 and 100 feet wide), and the remaining 32 crossings are minor crossings (less than 10 feet wide). In addition to these features, the proposed Stony Point to Yorktown Take-up and Relay segment crosses the Catskill Aqueduct near MP 10.3.

Several comments were received during scoping about the Project's potential to impact the watersheds that supply water to the New York City metropolitan area. Water supply to the New York City metropolitan area is provided from three primary sources: the Croton, the Catskill, and the Delaware Water Supply Systems. While the Catskill and Delaware Water Supply Systems are located about 50 miles north and northwest of the AIM Project facilities, portions of the AIM Project facilities would be located within the Croton Water Supply System. The Croton Water Supply System receives its supply of water from the Croton Watershed, which is also part of the New York City East of Hudson Watersheds. The Croton Watershed is generally bordered by the Hudson River to the west, Dutchess County to the north, the Connecticut state border to the east, and Kensico Reservoir to the south. This watershed is part of the system that serves 9 million people in urban areas of New York, as well as the 250,000 people in Westchester and Putnam counties. The Croton Watershed is protected under a long-term management plan by the New York City Department of Environmental Protection (NYCDEP). The 2008 New York State section 303(d) list of impaired waterbodies identified phosphorus as a pollutant of concern for eight impaired reservoirs within the watershed (NYSDEC, 2009a). Typical pollutant sources include

stormwater runoff from impervious surfaces, agricultural land and construction sites, excessive fertilizer use, leachate from septic systems, and effluent from wastewater treatment plans (NYSDEC, 2009a).

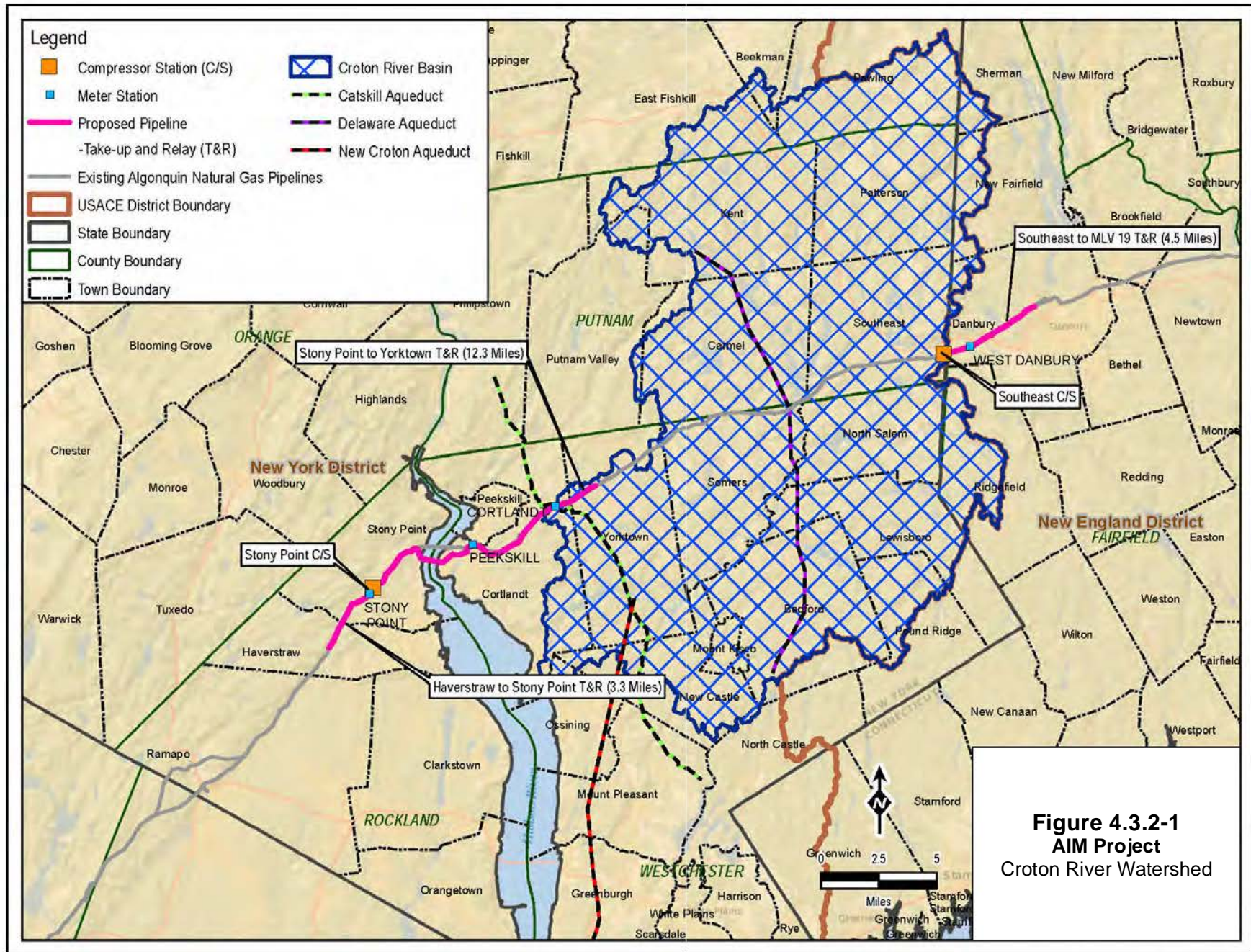
As shown on figure 4.3.2-1, the Croton Watershed would be crossed by the Stony Point to Yorktown Take-up and Relay segment between MPs 10.0 and 12.3 in the Town of Cortlandt and by the Southeast to MLV-19 Take-up and Relay segment between MPs 0.0 and 0.1 in the Town of Southeast. Algonquin would sequence construction activities to minimize the amount and duration of an open right-of-way within the watershed. Algonquin would use a separate construction crew to work in the 2.3-mile-long stretch within the watershed and has also committed to an environmental inspection and compliance monitoring program to monitor and enforce compliance with all permit conditions to protect the environment during construction (see section 2.5). In addition, Algonquin is working with the NYCDEP to develop a Stormwater Pollution Prevention Plan (SWPPP) that addresses NYCDEP's requirements for constructing within a New York City watershed.

The Catskill Aqueduct is part of the New York City water supply system. It brings water from the Catskill Mountains to Yonkers where it connects to other parts of the system. During the scoping process and in response to the draft EIS, we received several comments about the Project's impact on the aqueduct. Algonquin's existing pipelines currently cross over the aqueduct. As currently proposed, Algonquin would remove its existing 26-inch-diameter pipeline and casing, but not disturb the existing protective concrete slab, pending concurrence from the NYCDEP. Algonquin would build the proposed 42-inch-diameter pipeline above the aqueduct at a 50-foot offset from the existing line (see section 3.5.2.1). This offset would provide sufficient vertical clearance between the new pipeline and the Catskill Aqueduct. Construction across the Catskill Aqueduct would occur using the open-cut method and is expected to take about 1 month to complete. Construction measures that would be used to minimize potential impacts on the aqueduct include installing an 8-inch-thick concrete slab about 2 feet above the aqueduct and installing steel casing around the pipeline. Additional cover over the casing would be required to provide adequate depth of cover between the casing pipe and grade. This cover would be at a gentle 3:1 grade per NYCDEP specifications.

NYCDEP would require a Land Use Permit with detailed descriptions of work and additional information regarding impacts on the aqueduct resulting from construction and operation of the Project facilities. Algonquin would prepare final engineering designs to support NYCDEP's load requirements for vehicles on their right-of-way, and would submit them for review and approval as part of the Land Use Permit application process. As indicated above, Algonquin is also working with the NYCDEP to develop a SWPPP that addresses NYCDEP's requirements for constructing within a New York City watershed.

Because Algonquin is still working with NYCDEP to develop a final crossing plan for the Catskill Aqueduct, **we recommend that:**

- **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment, Algonquin should file with the Secretary its final site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP. The plan should be filed as critical energy infrastructure information in accordance with NYCDEP requirements.**





The Connecticut portion of the Project crosses 62 waterbodies within 6 subbasin level watersheds. Of these 62 waterbodies, 15 are perennial streams, 43 are intermittent streams, 3 are ephemeral streams, and 1 is a pond. Six of the proposed crossings are intermediate crossings and 56 are minor crossings.

The Massachusetts portion of the Project crosses one perennial stream, which is a minor crossing located within one subbasin level watershed.

### **Aboveground Facilities**

No waterbodies would be impacted by the work at the existing and proposed aboveground facilities. However, a few aboveground facility sites are located in relatively close proximity to mapped waterbodies as detailed below.

The Stony Point M&R Station in New York is located just northeast of Cedar Pond Brook. An unnamed tributary to Cedar Pond Brook is also located adjacent to the north boundary of the Stony Point M&R Station. The Stony Point Compressor Station is located to the east of an unnamed tributary to Cedar Pond Brook. This waterbody flows through a culvert under the permanent access road to the Station and would not be impacted during construction. The Cortlandt M&R Station in New York is located adjacent to an unnamed tributary to Hunter Brook. None of these waterbodies would be directly affected by construction or operation of these facilities.

In Connecticut, Coles Brook flows adjacent to the Cromwell Compressor Station and an unnamed tributary to Mount Hope River flows through a culvert under the permanent access road for the Chaplin Compressor Station. The Putnam M&R Station is about 0.1 mile northeast of the Quinebaug River and the Montville M&R Station is located to the north of an unnamed tributary to Stony Brook. The Farmington M&R Station is located about 0.1 mile north of Scott Swamp Brook. None of these waterbodies would be directly affected by construction and operation of these facilities.

The existing permanent access road to the Burrillville Compressor Station in Rhode Island crosses an unnamed stream near the entrance to the facility. The stream flows through a culvert under the access road and no impacts are anticipated during construction as the station.

In Massachusetts, the Norwood M&R Station is about 0.1 mile north of the Neponset River. The Wellesley M&R Station is less than 0.1 mile west of the Charles River. Neither of these waterbodies would be directly affected by construction and operation of these facilities.

### **Pipe and Contractor Ware Yards**

As described in Section 2.2.3, Algonquin would make use of three locations for pipe and contractor ware yards. These locations consist of existing industrial/commercial lands and would result in no impacts on waterbodies.

### **Access Roads**

As described in section 2.2.4, Algonquin would use existing roads in the Project area as temporary and permanent access roads to the extent feasible. One new PAR would be constructed from the existing North Fall River M&R Station site to the new Assonet M&R Station. No waterbodies would be impacted by this new PAR. Five waterbodies would be crossed by the existing access roads. We do not anticipate impacts on any waterbodies as a result of the use of these existing access roads.

#### 4.3.2.2 Sensitive Waterbodies

Waterbodies may be considered sensitive to pipeline construction for a number of reasons, including, but not limited to:

- waters that do not meet state water quality standards associated with the water's designated beneficial uses;
- surface waters that have been designated for intensive water quality management;
- waterbodies that support fisheries of special concern (i.e., EFH);
- waterbodies that are crossed less than 3 miles upstream of a potable water intake;
- waterbodies afforded national or state status for exceptional quality; and
- waterbodies listed on the National Rivers Inventory (NRI).

Other factors that can provide a basis for sensitivity include waterbodies located within a protected watershed, waterbodies and intermittent drainages that have steep banks and other characteristics that might contribute to high risk of erosion impacts, and surface waters that have important riparian areas. Table 4.3.2-1 identifies sensitive waterbodies that would be crossed by the Project. The table also provides details of known contamination, which is addressed in the following section. None of the proposed crossings are designated as EFH, though the proposed Hudson River crossing is located north of a designated EFH area as described in section 4.6.2.4.

#### Impaired Surface Waters and Contaminated Sediments

Algonquin reviewed the EDR Report and the Section 303(d) lists of impaired waterbodies for New York, Connecticut, Rhode Island, and Massachusetts (NYSDEC, 2013d; CTDEEP, 2013e; RIDEM, 2012; MADEP, 2013b). Table 4.3.2-1 summarizes the waterbodies that were determined to have surface water impairment and/or potential sediment contamination. The proposed aboveground facilities would not affect any waterbodies.

TABLE 4.3.2-1				
Sensitive Waterbodies Crossed by the AIM Project				
State/Facility/Waterbody I.D.	Waterbody Name	MP	Basis for Sensitivity	Detail <sup>a</sup>
<b>NEW YORK</b>				
<b>Stony Point to Yorktown Take-up and Relay</b>				
Hudson River	Lower Hudson River	3.0	Impaired	Listed impaired for PCBs and other toxics from contaminated sediment (NYSDEC, 2013d).
<b>CONNECTICUT</b>				
<b>Line-36A Loop Extension</b>				
B13-CLR-S1	Coles Brook	0.1	Impaired	Listed impaired for <i>E. coli</i> with a designated use as 'Recreation' (CTDEEP, 2013e).
<sup>a</sup> E. Coli = <i>Escherichia coli</i>				

As described in section 2.3.1.2, the Hudson River would be crossed using the HDD method. Algonquin proposes to construct the remaining pipeline crossings using a dry construction technique (i.e., dam and pump, and/or flume) if flowing water is present at the time of the crossing to minimize soil erosion and sedimentation downstream.

### **Waterbodies Containing Threatened or Endangered Species or Critical Habitat**

Algonquin consulted with the various federal and state agencies to identify waterbodies that may contain federally or state-listed threatened or endangered or candidate species and their habitat. Additional information regarding special status species is provided in section 4.7.

### **Waterbodies that Support Fisheries of Special Concern**

Thirty of the Project waterbody crossings support fisheries of special concern. Eight waterbodies are waters with naturally occurring spawning populations of trout. One waterbody (the Hudson River) contains threatened and endangered species and anadromous fisheries. Fisheries of special concern are discussed in greater detail in section 4.6.2.2.

### **National or State Recognized Exceptional Quality Waters**

The NYSDEC maintains a list of high quality Wild, Scenic and Recreational Rivers, rivers that have excellent scenic, ecological, recreational, historic, and scientific values (NYSDEC, 2013l). No State Recognized Exceptional Quality Waters would be affected by the Project facilities.

New York State has adopted a Hudson River Estuary Action Agenda 2010-2014 (NYSDEC, 2010a). Some of the specific goals of the Action Agenda are:

- signature fisheries;
- river and shoreline habitats;
- streams and tributaries;
- contaminant reduction; and
- improvement and protection of the water quality of the Hudson River.

Algonquin proposes to cross the Hudson River using the HDD method. Therefore, construction would not result in any adverse impacts on water quality in the Hudson River (see section 4.3.2.6).

The CTDEEP does not have a formal published list of state recognized exceptional or high-quality waters. The state designates surface waters as one of three Inland Surface Water Classifications that include Class AA (suitable for drinking), Class A (habitat and potential drinking water) and Class B (suitable for recreation) (CTDEEP, 2013r). The proposed Project would cross 10 Class AA waters and 55 Class A waters.

The RIDEM has no available list of exceptional quality waters and no waterbodies would be crossed in Rhode Island (RIDEM, 2013b).

The MADEP Surface Water Quality Standards (314 Code of Massachusetts Regulations [CMR] 4.00) define Outstanding Resource Waters (ORW), which include all Class A Public Water Supplies and their tributaries and any other waters specially designated by the MADEP because of their outstanding socioeconomic, recreational, ecological, and/or aesthetic values. ORWs along the proposed route were identified using the watershed delineations depicted in the MassGIS ORW datalayer (MassGIS, 2013b) and the Massachusetts Surface Water Quality Standards Program publication *Designated Outstanding Resource Waters of Massachusetts*. No ORWs would be impacted by the Project (MassGIS, 2013b).

### **Public Water Supply Intakes**

Based on a review of available information, there are no surface water supply intakes located within 3 miles downstream of any waterbodies affected by the Project facilities in New York, Connecticut, Massachusetts, or Rhode Island (NYSDOH, 2014; Connecticut Department of Public Health, 2013; MassGIS, 2013b).

### **National Rivers Inventory**

No federal wild and scenic rivers or Natural Heritage Areas would be crossed by the Project (National Wild and Scenic Rivers System, 2013; National Park Service, 2013). However, the Hudson River has been designated by the EPA as an American Heritage River. Pursuant to Executive Order 13061, *Federal Support of Community Efforts Along American Heritage Rivers*, issued on September 11, 1997, the American Heritage Rivers initiative directs federal agencies to provide effective and efficient federal assistance to river communities, with the goal of enhancing natural resource and environmental protection, economic revitalization, and historic and cultural preservation.

#### **4.3.2.3 Waterbody Construction Procedures**

As described above, the pipeline segments would cross 102 waterbodies consisting of 85 minor crossings, 16 intermediate crossings, and 1 major crossing, the Hudson River. The Hudson River in New York and the Still River in Connecticut would be crossed using the HDD method. The remaining 100 crossings would be completed using a dry crossing method. At the request of the NYSDEC, Algonquin prepared a crossing methods analysis for all protected streams in New York. This information was included in appendix E of the section 401 Water Quality Certification (WQC) Application filed with the NYSDEC. A copy was also filed with the Secretary at the same time it was filed with the NYSDEC. Following the crossing methods analysis, Algonquin determined that using the HDD method would not be feasible at the remaining waterbodies when compared to the dry crossing method. The reasons varied from site to site, but, in general, included new temporary impacts on nearby residences, direct impacts on residential homes, and the need to acquire new easement rights for the permanent right-of-way for operation and maintenance of the pipeline. Therefore, Algonquin has committed to using the dry crossing method to install the pipeline at all waterbody crossings in New York except the Hudson River. Similarly, HDDs at each of the waterbody crossings in Connecticut and Massachusetts would not be feasible. Factors in HDD design include the availability of a straight and relatively low relief laydown area for the pullback pipe section; the availability of large work areas at the HDD entry and exit points; surrounding terrain; land use; and operation concerns. Based on information from Algonquin, our review of Project mapping, and information we obtained during visits to the Project area, we conclude that the use of the HDD method at all waterbody crossings would be either technically infeasible, impractical, or would not result in a clear environmental advantage to the proposed dry crossing methods. Alternative construction methods evaluated for certain waterbody crossings are discussed in section 3.5.4.

## Dry Crossing Methods

The dry crossing method would be used to install Project pipeline facilities at all waterbody crossing locations if there is flowing water at the time of construction. Dry crossing methods involve installation of a flume pipe(s) and/or dam and pump prior to trenching to divert the stream flow over or around the construction area and allow trenching of the stream crossing in drier conditions isolated from the stream flow. Spoil removed during the trenching would be stored away from the water's edge and protected by sediment containment structures. Pipe strings would be fabricated on one bank and either pulled across the stream bottom to the opposite bank or carried into place and lowered into the trench. Where these methods are employed, ATWS areas would be required for assembly of the pipe strings and spoil storage areas.

## Horizontal Directional Drill

Algonquin would use the HDD crossing method at the Hudson River in New York and the Still River in Connecticut. At both crossings, Algonquin anticipates using the intersect method to complete the pilot hole. Additional details of the two HDD installations are provided below. These descriptions are based on the HDD feasibility report for each crossing provided by Algonquin (Hatch Mott MacDonald, 2014c and 2014d). To date, Algonquin has not provided a contingency plan that incorporates another location or another construction methodology for each of these HDD crossings. If an HDD in its proposed location proves unsuccessful, Algonquin would be required to identify a new location for the crossing or new methodology, and request approval for the new location or methodology with all applicable agencies. Therefore, **we recommend that:**

- **In the event of an unsuccessful HDD at the Hudson or Still Rivers, Algonquin should file with the Secretary a plan for the crossing of the waterbody. This should be a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction. Algonquin should file this plan concurrent with the submission of its application to the USACE and other applicable agencies for a permit to construct using this alternative crossing plan. The Director of OEP must review and approve this plan in writing before construction of the alternative crossing.**

### Hudson River HDD

For the Hudson River HDD, the proposed entry/exit location on the west side of the river would be located within an abandoned and remediated power plant facility. The exact location on the property has been modified since the issuance of the draft EIS. Since that time, Algonquin has continued to finalize the design details of the Hudson River HDD. This included evaluating possible engineering options to safely penetrate the existing sheet pile wall at the previously proposed entry/exit side on the west side of the river. As a result, Algonquin relocated the western HDD entry/exit point approximately 850 feet northwest of the previously proposed location (see section 3.5.2). The entry/exit hole location on the east side of the river would be located in a moderately sloping area that is part of an abandoned quarry operation. The east side would also function as the pipe string staging area. The staging area on the east side is limited and would require intermediate welds to fabricate the pipe string during pullback operations. It is estimated that the HDD would take about 5 months to complete.

Algonquin conducted an evaluation of the geological and geotechnical conditions of the proposed HDD alignment at the Hudson River. The exploration program consisted of 11 geotechnical bore holes in the vicinity of the Hudson River crossing. Two borings were drilled on the western and eastern shores of

the Hudson River, respectively. The remaining nine borings were drilled within the limits of the Hudson River. Soil/sediment samples were collected with a standard 2-inch split spoon sampler, and rock coring was conducted within the bedrock utilizing a 2.5-inch-inside diameter core barrel. Bedrock cores were measured for recovery and rock quality designations (RQD), described for lithology, and recorded. In addition to these bore holes, three bedrock probe holes were also drilled to the top of bedrock on the west side of the Hudson River to better define the bedrock surface on that side of the river.

The locations of the bore holes were selected to provide geotechnical information to support design efforts for the crossing and to identify the location of a deep historic river channel that was known to exist further to the north of the Project area (in the vicinity of the Interstate 84 crossing of the Hudson River). The historic channel was intersected about 825 feet offshore of the west bank of the river where a soil boring encountered soil materials to a depth of about 285 feet below the river surface (about 220 feet below the river bottom). This channel was in-filled with about 40 feet of gravels, cobbles, and boulders. Soil materials above this consisted of a thick (125 feet) deposit of very soft clays, overlain by a layer of unconsolidated soil materials varying in thickness from about 35 to 60 feet. Gravels, cobbles, and boulders were also encountered just above the bedrock surface on the east side of the river, about 100 feet below the bottom of the river. These materials were overlain by up to 90 feet of very soft clay and unconsolidated soils. Bedrock consisting of limestone/dolostone was encountered at the bottom of each boring; however, the bedrock in the westernmost bore hole consisted of schist.

Sands, silts, and clays typically present no significant challenge to an HDD installation. These materials are often described as good to excellent materials with regard to the feasibility of an HDD. Soils containing gravels and larger size particles (cobbles and boulders) range from marginally acceptable to unacceptable relative to the feasibility of an HDD, depending on the percentage of gravels by weight. Only those particles that can be suspended within the drilling fluid can be removed from the HDD bore hole. Gravel-sized particles tend to settle out and accumulate along the bottom of the bore hole. Large soil particles cannot be suspended by the drilling fluid. To properly remove the cuttings and support the open bore, the drilling fluid must remain within the bore without excessive loss to the surrounding formations. Deposits of gravel and cobble-sized clasts can allow drilling fluids to escape into the surrounding formations. As a result, the bore may collapse, making reaming and pipe pullback operations extremely difficult, if not impossible.

Algonquin proposes to install the HDD using a drill path in the soft soils above the bedrock and old channel lag deposits. The substrate crossed by the adjusted Hudson River HDD alignment would not change (i.e., like the previously proposed HDD alignment, the new HDD alignment would remain within the soft sediments beneath the river). The intersect HDD installation technique would be required for the Hudson River Crossing. This is primarily due to the required length of the installation, anticipated soil conditions, and requirements for temporary conductor casings on each end of the HDD alignment. This method consists of drilling the pilot hole from both ends of the alignment and meeting at a target location established within the middle section of the HDD bore. The horizontal length of the proposed HDD installation from entry to exit would be 5,090 feet. The depth of cover beneath the Hudson River bottom would range from 20 feet at the western shore to 26 feet at the eastern shore. At its deepest point the pipe would be installed 100 feet below the river bed. A site-specific crossing plan is provided in appendix J.

Prior to initiating the drill at the Hudson River, Algonquin would install telescoping casings of decreasing sizes on both sides of the crossing to a depth of about 90 feet. The largest diameter casing would be a minimum of 60 inches. The casings would not reach the bedrock interface at the Hudson River crossing because they would be installed completely in soft sediments and would not cross the barrier between the upper and lower aquifer at this location. Grouting of the casing annulus would not be necessary as the casing would be driven or vibrated into the sediments and would not require installation

inside a pre-drilled bore hole, thus there is no annulus outside the casing. The smaller diameter steel casings located on both sides of the crossing would be removed prior to pullback, whereas the larger diameter casings would stay in place during pullback operations. The larger diameter casing located on both sides of the crossing would be removed once the pullback is complete.

Algonquin completed a hydraulic fracture evaluation for the Hudson River HDD generally in accordance with the Delft Geotechnics Method outlined in appendix B of the USACE report *Installation of Pipelines beneath Levees Using Horizontal Directional Drilling* (Staheli et al., 1998). This method is used to estimate the maximum effective pressure (i.e. drilling fluid pressure) that can be induced during an HDD operation within a particular soil horizon. This pressure is then compared with the fluid pressure required to induce slurry flow within the HDD bore to determine the potential for a hydraulic fracture (resulting in the potential for an inadvertent release of drilling fluid) for a given HDD alignment. The required fluid pressure for an HDD installation is governed by the drilling fluid weight (commonly referred to as the mud weight), installation length and depth, and drilling fluid flow properties (plastic viscosity, yield point, etc.). The Delft Geotechnics Method assumes a uniform column of soil above any point of interest along the HDD alignment. Where an increased risk of hydraulic fracture is identified, it does not necessarily mean that a hydraulic fracture would occur.

The results of the preliminary hydraulic fracture evaluation suggest a relatively high potential for hydraulic fracture in the soft sediments of the Hudson River HDD alignment. Generally, when hydraulic fracture potential is high or anticipated for a given installation, the bore can be placed within geotechnical materials that are more favorable for an HDD and reduce the hydraulic fracture potential. This typically involves increasing the installation depth, thereby increasing the depth of cover above the drill path and pipeline. However, for the proposed Hudson River crossing, a deeper drill path option that would provide sufficient resistance to the predicted fluid pressure is not practicable due to the presence of shallow bedrock on either side of the crossing, the extreme depth of the historic river channel on the western side of the crossing, and the presence of gravel and cobble channel lag deposits in portions of the subsurface. An HDD alignment entirely within the bedrock is also not practicable due to the depth of the soil/bedrock interface at the crossing location. The depth and topography of the bedrock profile along the proposed crossing is a result of the historic river channel, particularly on the western side of the crossing.

The risk of hydraulic fracture and a potential inadvertent release of drilling fluid is highest during completion of the pilot hole. As described above, Algonquin would install the HDD crossing of the Hudson River using the intersect HDD installation technique. This approach essentially reduces the length and duration of completing the pilot hole by 50 percent, since the drill path is advanced from both sides of the crossing and meets near the middle of the drill path. Additionally, installing the HDD crossing in the softer sediments, as proposed, rather than in bedrock would significantly shorten the duration of construction required to complete the HDD operation. As noted above, where model calculations identify an increased risk of hydraulic fracture, it does not necessarily mean that a hydraulic fracture will occur during actual drill operations. With advanced knowledge of the higher potential for hydraulic fracture the drilling contractor can also adjust drill conditions to reduce the risk of fracture. If an inadvertent release is observed in an accessible upland area near shore, proper containment structures would be used to contain the release. If the release cannot be contained, the operator would suspend drilling operations until appropriate containment is in place. It is possible that some drilling fluid would be released into the river during a hydraulic fracture; however, the volume would be minimal and would not accumulate due to the rapid drilling rates. Due to the river current, marine traffic, existing turbidity, and other pollutants that contribute to the discoloration of a major waterbody like the Hudson River, it is unlikely that an inadvertent release would be identifiable. It is also unlikely that the drilling fluid would accumulate in the navigation channel or a major waterbody like the Hudson River. Additional information is presented in the BDP Plan (see appendix J).



Based on our assessment of the geotechnical conditions at the proposed HDD crossing of the Hudson River, we conclude that the HDD method is an appropriate technique for installing the pipeline at this river crossing, and that the HDD crossing could be completed successfully, despite the risk of hydraulic fracture during completion of the pilot hole. We also find that the BDP Plan and additional measures identified above would minimize the possibility of an inadvertent release to the extent feasible, and that, if an inadvertent release was to occur, appropriate measures would be implemented to minimize any resulting impacts.

#### Interstate 84/Still River HDD

The proposed HDD crossing of Interstate 84 and the Still River is located in the City of Danbury, Connecticut. The proposed HDD entry location would be located within a rest area southwest of Interstate 84. The HDD entry location is relatively flat and easily accessed. The entry location would also serve as the preferred pipe string staging area. The staging area is limited and would require intermediate welds to fabricate the pipe string during pull back operations. The proposed exit location would be to the east of Mill Plain Road. The HDD crossing method would be used in this location to avoid impacts on Interstate 84, the Still River, and a large wetland complex associated with the river. It is estimated that the HDD would take about 7 months to complete.

Algonquin conducted an evaluation of the geological and geotechnical conditions of the proposed HDD alignment at the Interstate 84/Still River crossing. The exploration program consisted of nine geotechnical bore holes completed in the vicinity of the crossing. Two borings were drilled to the south of Interstate 84 and one boring was drilled to the north of Mill Plain Road. The remaining six borings were drilled between Interstate 84 and Mill Plain Road in the vicinity of the wetland and auto dealership property. Soil/sediment samples were collected with a standard 2-inch split spoon sampler, and rock coring was conducted within the bedrock utilizing a 2.5-inch-inside diameter core barrel. Bedrock cores were measured for recovery and RQDs, described for lithology, and recorded. The locations of the bore holes were selected to provide geotechnical information to support design efforts for this crossing and to identify areas of increased risk resulting from potential subsurface conditions.

In general the geotechnical borings indicated the presence of coarse-grained deposits of sand and gravel overlying gneissic bedrock. On the southwest side of the crossing, in the vicinity of the entry location, deposits of dense sand and gravel about 80 feet thick overlying alternating layers of schistose gneiss and granitic gneiss were encountered. As the alignment progresses to the northeast, the bedrock surface becomes much more shallow, rising to between 19 and 37 feet below ground surface, as the alignment approaches the wetland area. The three borings collected within the wetland contained much thicker overburden deposits of sand and gravel overlying decomposed gneissic bedrock materials. The sand and gravel deposits beneath the wetland ranged from 86 to 140 feet thick. At one boring location beneath the wetland, no competent bedrock was encountered and no bedrock core was recovered to the termination depth of the boring at 250 feet below ground surface. Farther northeast, the two cores drilled on the auto dealership property showed that the bedrock surface becomes shallower as the alignment progresses northeast, with bedrock ranging between 121 feet and 52 feet below ground surface. Both borings also encountered extensive deposits of gravel, cobbles, and boulders overlying the bedrock. The last core in the vicinity of the exit location encountered decomposed bedrock at a depth of just 5 feet below ground surface; competent bedrock was not encountered until 47 feet below ground surface in this location.

The presence of cobbles and boulders, and zones of poor bedrock quality encountered during the geotechnical investigation would pose significant risks to bore hole stability, steering and guidance of drilling equipment during pilot hole completion, and could potentially result in damage to the pipeline

during installation. Bedrock can be highly variable and can be classified as being excellent to unacceptable with respect to HDD feasibility. Competent bedrock is well suited for HDD as the bore tends to remain open for extended periods of time. However, heavily weathered, jointed, fractured, or fissured bedrock can present challenges with respect to bore stability and drilling fluid migration away from the HDD bore. Poor quality bedrock can present the same challenges as coarse granular deposits, if fracturing and jointing is extensive, and can present an unacceptable risk in terms of feasibility for an HDD installation. The risk associated with poor quality bedrock stems from the inability to support and maintain stability of the bore hole. This risk increases with RQD ratings below 60 percent, with lower RQD ratings presenting higher risks. A small zone of low RQD within a drill path can often be accommodated and does not present a significant risk to an HDD installation. However, an extensive zone of low RQD can present challenges. For the proposed Interstate 84 crossing, Algonquin has designed the drill to avoid areas containing low RQD ratings to the maximum extent possible; however, there exists a portion of the drill alignment that is located within an area of low RQD and could pose a risk during the drilling of the initial pilot bore hole. This area is located between stations 24+00 and 32+00 (borings B-4, B-7, and B-9) where decomposed bedrock consisting of saprolite (highly decomposed) gneiss and RQDs were either mixed or non-existent.

To address these risks, Algonquin has designed the crossing to install the pipeline within the highest quality bedrock to the maximum extent practicable. Additionally, Algonquin would install temporary conductor casings at both the entry and exit points. The casings would be installed to bedrock at the entry and exit holes, minimizing the potential for inadvertent returns in these shallower areas of the drill path where the drill would encounter deposits of sands and highly weathered bedrock materials. Algonquin would also use the intersect HDD installation strategy for the Interstate 84 HDD crossing. This method would be used primarily due to the required length of the installation, strength of the bedrock materials, and requirement for temporary conductor casings on both sides of the crossing. The true length of the proposed HDD installation would be 3,736 feet (the horizontal length, entry to exit, would be 3,697 feet). The minimum depth of cover would be about 65 feet as the alignment approaches Mill Plain Road. At its deepest point, between the wetland and Interstate 84, the pipe would be installed about 172 feet below ground surface. A site-specific crossing plan is provided in appendix J.

The results of the preliminary hydraulic fracture evaluation for the Interstate 84/Still River HDD indicate that the required bore pressure to facilitate the installation process would be well below the allowable bore pressure along the majority of the installation. This suggests there is little risk of hydraulic fracture along the drill path and a low probability for inadvertent returns of drilling fluid. The risk of hydraulic fracture (resulting in the potential for an inadvertent return of drilling fluid) is highest during completion of the pilot hole, particularly near the entry and exit holes due to the shallow depth of cover. To minimize the potential for inadvertent returns near the entry and exit sides of the drill, and to facilitate HDD operations and drilling fluid recycling, Algonquin would install telescoping casings of decreasing sizes on both sides of the crossing. The casings would be installed to a depth sufficient to intercept the bedrock at each end of the crossing. The largest diameter casing would be a minimum of 60 inches. Grouting of the casing annulus would not be necessary as the casing would be driven/vibrated into overburden sediments and not be installed inside a pre-drilled hole, thus there is no annulus outside the casing. The smaller diameter steel casings located on both sides of the crossing would be removed prior to pullback whereas the larger diameter casings would stay in place during pullback operations.

Based on our initial assessment of the geotechnical conditions at the proposed HDD crossing of Interstate 84 and the Still River, we conclude that the HDD method is an appropriate technique for installing the pipeline at this crossing, and that with the implementation of the mitigation measures Algonquin proposes to employ, the HDD crossing could be completed successfully. However, Algonquin has indicated that additional investigation would be required to verify the existence, type, and depth of

any existing bridge foundations where the HDD alignment would cross Ridgebury Road. This investigation could identify additional mitigation measures that are needed to address any existing bridge foundations associated with Ridgebury Road. Therefore, **we recommend that:**

- **Prior to construction of the Interstate 84/Still River HDD, Algonquin should file with the Secretary, for review and written approval of the Director of OEP, a revised site-specific plan for the crossing if additional measures are needed to address any existing bridge foundations associated with the alignment across Ridgebury Road.**

### **Drilling and Blasting at Waterbodies**

Some limited blasting may be required along the Project pipeline segments to increase the depth and width of the existing trenches to accommodate the larger diameter pipeline. Based on a review of the USDA soils data and field surveys, there are nine streams (see table 4.3.2-2) with shallow bedrock that may require blasting during construction (USDA, 2013d). Trench crews would determine if rock is present and if blasting would be required.

TABLE 4.3.2-2					
Waterbody Crossings That May Require Blasting During Construction for the AIM Project					
State/Facility/Stream Name <sup>a</sup>	Stream I.D.	MP	Crossing Width (feet)	Soil type	Depth to bedrock (Inches)
<b>NEW YORK</b>					
<b>Stony Point to Yorktown Take-up and Relay</b>					
UNT to Cedar Pond Brook	A13-SPLR-S1	0.4	25	Charlton-Rock outcrop complex	0
UNT to Dickey Brook	B13-SPLR-S7	6.7	3	Chatfield-Hollis-Rock outcrop complex	20
UNT to Furnace Brook	B13-SPLR-S13	7.6	2	Chatfield-Hollis-Rock outcrop complex	20
<b>CONNECTICUT</b>					
<b>Southeast to MLV 19 Take-up and Relay</b>					
UNT to Kohanza Brook	B13-SELR-S6	3.0	4	Charlton-Chatfield complex, very rocky	20
Kohanza Brook	B13-SELR-S7	4.1	12	Charlton-Chatfield complex, very rocky	20
<b>E-1 System Lateral Take-up and Relay</b>					
UNT to Susquetonscut Brook	B13-ELR-S9C	5.0	2	Hollis-Chatfield-Rock outcrop complex	20
UNT to Susquetonscut Brook	B13-ELR-S9B	5.3	3	Rippowam fine sandy loam	>60
Susquetonscut Brook	B13-ELR-S5B	5.8	18	Rippowam fine sandy loam	>60
<b>E-1 System Lateral Loop</b>					
UNT to Stony Brook	B13-ELP-S6	0.9	5	Hollis-Chatfield-Rock outcrop complex	15
<sup>a</sup> UNT = Unnamed tributary.					

Only two of the waterbodies listed in table 4.3.2-2 contain fisheries of special concern. Susquetonscut Brook crossed by the E-1 System Lateral Take-up and Relay segment in Connecticut is considered a warmwater fishery, and the Unnamed Tributary to Stony Brook crossed by the E-1 System Lateral Loop segment is considered a coldwater fishery (see section 4.6.2). None of the other waterbodies that may require blasting are considered sensitive.

#### **4.3.2.4 Extra Workspaces Within 50 Feet of Waterbodies**

The FERC's Procedures stipulates that all ATWS should be located at least 50 feet from waterbodies except where an alternative measure has been requested by Algonquin and approved by the FERC. Algonquin identified certain areas where they believe site-specific conditions do not allow for a 50-foot setback of ATWS from waterbodies. Table 4.3.2-3 identifies the locations and the reasons why Algonquin believes the ATWS is justified. Based on our review, we concur that all of Algonquin's requests are justified.

#### **4.3.2.5 Hydrostatic Test Water**

Algonquin would verify the structural integrity of the piping associated with the Project facilities before placing them in service by conducting hydrostatic testing. Testing would be completed by capping installed pipe segments with test manifolds, filling these segments with water, pressurizing the water, then checking for pressure losses due to pipeline leakage. The integrity of the piping at aboveground facilities would also be hydrostatically tested. Algonquin estimates a need for a total of about 10,082,645 gallons of water to conduct the hydrostatic testing of pipeline segments and aboveground facilities. Of this total, about 9,610,245 gallons would be for testing pipeline segments and 472,400 gallons would be for testing aboveground facilities. The estimated hydrostatic test water requirements for each facility are listed in tables 4.3.2-4 and 4.3.2-5. Following testing, all test water would be discharged into dewatering structures located in upland areas and within the construction work area at a rate of 1,000 to 1,200 gpm in accordance with Algonquin's E&SCP and all applicable permits. Samples of the discharge water would be collected and tested in accordance with federal and state permit requirements.

The Hudson River HDD and the Interstate 84/Still River HDD pipe segments would be hydrostatically tested before and after the HDD pull back activities are completed. The other pipeline segments would be hydrostatically tested in one section, with the exception of the Stony Point to Yorktown Take-up and Relay and West Roxbury Lateral segments, which would be tested in two sections.

Following testing of the pipeline, the water would be discharged into dewatering structures located in upland areas and within the construction work area in accordance with Algonquin's E&SCP. The discharge rate would range between 1,000 and 1,200 gpm and would be regulated to maintain proper function of the dewatering structure. The majority of this water would infiltrate the soil and recharge the local groundwater system. NYSDEC requested that Algonquin comply with the hydrostatic testing best management practices provided to them by NYSDEC. Algonquin would follow the procedures outlined in the E&SCP.

TABLE 4.3.2-3				
Requested Modifications for Additional Temporary Workspace Near Waterbodies for the AIM Project				
State/Facility/Waterbody ID	ATWS MP	ATWS Size (acres)	Distance from Resource Area (feet)	ATWS Justification
NEW YORK				
Haverstraw to Stony Point Take-up and Relay				
B13-RLR-S3D	1.1	0.5	0-30	Extra workspace is required for multiple wetland and waterbody crossings at Call Hollow Road crossing
B13-RLR-S3I				
B13-RLR-S3J				
B13-RLR-S6	2.2	0.9	0	Extra workspace is required for Palisades Interstate Parkway crossing
B13-RLR-S10	3.0	0.1	0	Extra workspace is required for wetland and Highway 210 crossings
B13-RLR-S10A	3.0	0.3	0	Extra workspace is required for wetland and Highway 210 crossings
Stony Point to Yorktown Take-up and Relay				
A13-SPLR-S1	0.4	0.1	30	Extra workspace is required for waterbody crossing with steep slopes near residential development
B13-SPLR-S2	5.9	0.6	0	Extra workspace is required for wetland and waterbody crossings
B13-SPLR-S21A	10.3	0.5	0	Extra workspace is required for wetland and waterbody crossings at Cortlandt M&R Station
B13-SPLR-S21B				
CONNECTICUT				
Southeast to MLV 19 Take-up and Relay				
B13-SELR-S1	3.3	0.1	0	Extra workspace is required for wetland and waterbody crossings near residential development at Westville Road crossing
E-1 System Lateral Take-up and Relay				
A13-ELR-S1	0.7	0.1	35	Extra workspace is required for wetland and waterbody crossings
B13-ELR-S11	4.9	0.2	0	Extra workspace is required for multiple wetland and waterbody crossings
B13-ELR-S5B	5.8	0.1	35	Extra workspace is required for railroad, waterbody and wetland crossings
B13-ELR-S18	8.5	0.2	0	Extra workspace is required for Wisconsin Avenue road crossing (waterbody flows diagonally under road)
B13-ELR-S18	8.5	0.2	30	Extra workspace is required for Wisconsin Avenue road crossing (waterbody flows diagonally under road)
B13-ELR-S24	8.9	0.1	35	Extra workspace is required for large wetland complex

TABLE 4.3.2-4			
Potential Hydrostatic Testing Water Sources for Pipeline Facilities for the AIM Project			
State, Facility	Estimated Volume (gallons)	Water Source	Discharge (MP)
<b>New York</b>			
Haverstraw to Stony Point Take-up and Relay	1,242,537	Municipal	0.0/3.3
Stony Point to Yorktown Take-up and Relay	4,677,562	Municipal/ Old Verplanck Quarry Lake	0.0/4.1/8.9/12.1
Hudson HDD <sup>a</sup>	284,985	Old Verplanck Quarry Lake	3.2/3.9
Southeast to MLV 19 Take-up and Relay	56,997	Municipal	0.0
<b>Connecticut</b>			
Southeast to MLV 19 Take-up and Relay	1,614,918	Municipal	1.5/2.2/4.4
Interstate 84/Still River HDD <sup>a</sup>	296,385	Municipal	1.5/2.2
Line-36A Loop Extension	558,339	Municipal	0.0/2.0
E-1 System Lateral Take-up and Relay	501,816	Municipal	0.0/9.1
E-1 System Lateral Loop Extension	40,324	Municipal	0.0/1.3
<b>Massachusetts</b>			
West Roxbury Lateral	336,382	Municipal	0.0/4.3/5.1
<b>TOTAL PIPELINE FACILITIES</b>	<b>9,610,245</b>		
<sup>a</sup> HDD sections would be tested immediately after installation. These sections may additionally be tested with the mainline.			

TABLE 4.3.2-5			
Potential Hydrostatic Testing Water Sources for Aboveground Facilities for the AIM Project <sup>a</sup>			
State/Facility	Estimated Volume (gallons)	Water Source	Discharge
<b>New York</b>			
Stony Point Compressor Station	351,000	Municipal	On site
Southeast Compressor Station	22,000	Municipal	On site
M&R Stations (total of 3)	800	Municipal	On site
<b>Connecticut</b>			
Cromwell Compressor Station	35,000	Municipal	On site
Chaplin Compressor Station	33,500	Municipal	On site
M&R Stations (total of 14)	5,600	Municipal	On site
<b>Rhode Island</b>			
Burrillville Compressor Station	20,500	Municipal	On site
<b>Massachusetts</b>			
M&R Stations (total of 10)	4,000	Municipal	On site
<b>TOTAL ABOVEGROUND FACILITIES</b>	<b>472,400</b>		
<sup>a</sup> M&R station facilities and/or certain equipment at these facilities may be tested pneumatically.			

#### **4.3.2.6 General Impacts and Mitigation**

Project construction activities that potentially can affect water resources include clearing and grading, pipeline installation across waterbodies, HDD, hydrostatic testing, and potential spills or leaks of hazardous materials. Pipeline construction can affect surface waters in several ways, including modifying the existing aquatic habitat, increasing runoff and the rate of in-stream sediment loading, and increasing turbidity levels. Clearing and grading of streambanks, in-stream trenching and backfilling, and trench dewatering can introduce sediment directly or indirectly into the water column. Surface water impacts can also result from inadvertent releases of drilling fluids in the water column during HDD operations, hydrostatic test water discharges that erode stream beds and banks, and potential spills of hazardous liquids such as fuels and lubricants.

The clearing and grading of the waterbody banks associated with dry crossings (i.e., flume or dam-and-pump crossing methods) would disturb riparian vegetation and soils. Blasting could permanently alter the stream channel. Heavy equipment used during construction could also compact upland and riparian soils, which could reduce infiltration and cause greater runoff to waterbodies.

Long-term impacts on water quality can result from alteration of the waterbody banks. If not stabilized and revegetated properly, soil erosion can continue after construction, depositing sediments in the waterbodies. The level of impact of the proposed Project on surface waters would depend on precipitation events, sediment loads, stream area/velocity, channel integrity, and bed material.

#### **Trench Dewatering**

During construction, the open trench may accumulate water, either from the seepage of groundwater or from precipitation. Where dewatering is necessary, the trench water would be removed and directed into well-vegetated uplands and/or filter bags, as described in Algonquin's E&SCP to remove sediment or other contaminants and prevent heavily silt-laden water from flowing into any adjacent waterbodies or wetlands. We find these measures acceptable; however, NYSDEC was particularly concerned about trench dewatering and requested that Algonquin commit to isolating shorter portions of trench to reduce the volume of trench water that would need to be handled at one time. Algonquin has provided typical designs for proposed trench dewatering structures and committed to using an alternative trench dewatering structure that involves a geotextile floor surrounded by a minimum of one row of staked hay bales installed around the perimeter of a filter bag dewatering location. This would provide additional filtration at specific locations if the EI determines the filter bag dewatering structure alone is not adequate. Algonquin also indicated that the amount of trench dewatering would be minimized by limiting the amount of open trench or by installing soil plugs in the open trench to isolate the trench length in need of dewatering in a specific work area.

#### **Dry Crossings**

Construction-related impacts associated with the dry crossing method would be limited to short periods of increased turbidity before installation of the pipeline during the assembly of the upstream and downstream dams and following installation of the pipeline when the dams are pulled and flow across the restored work area is re-established. Use of the measures identified in the E&SCP would minimize these potential short- and long-term impacts, including minimization of clearing of streamside vegetation, installation and maintenance of temporary and permanent erosion controls, and minimization of the duration of in-stream construction.

Stream bed and bank contours would be re-established and stabilized prior to returning flow to the waterbody channel. Otherwise, completed stream crossings would be stabilized within 24 hours of backfilling. Original stream bed and bank contours would be reestablished and biodegradable material, such as mulch, jute thatching, or bonded fiber matrix blankets, would be installed on the stream banks to



prevent erosion and encourage reestablishment of vegetation cover. Where necessary, slope breakers would be installed adjacent to stream banks to minimize the potential for erosion.

Long-term impacts associated with pipeline operation and maintenance would be relatively minor. Stream banks would be stabilized and revegetated following installation of the pipeline and post-construction vegetation maintenance would be limited to the permanent right-of-way pursuant to the E&SCP.

Algonquin has also incorporated several route and workspace modifications into its proposed Project to reduce the number of waterbody crossings or minimize other impacts on waterbodies. For example, as a result of field visits with the USACE, Algonquin incorporated a route and workspace adjustment to avoid direct in-stream impacts on Dividend Brook. Previously there were five crossings of Dividend Brook and with the route and workspace adjustment, there would be no crossings of this waterbody. In addition, a crossing of Mother Brook along the West Roxbury Lateral would be avoided by placing the new pipeline above a box culvert to accommodate the pipeline within Washington Street. Section 3.5.2 summarizes all of the route alternatives, variations, and Project design modifications evaluated after the draft EIS to minimize impacts on various resources, including waterbodies.

### **Blasting**

If blasting in waterbodies is required, the primary impact that could occur is a permanent alteration of the stream channel. Algonquin would follow the procedures identified in its E&SCP and Rock Removal Plan (see appendix E) to minimize impacts associated with blasting. We find these procedures to be acceptable.

In-stream work in Susquetonscut Brook would occur during the appropriate timing window for warmwater fisheries (June 1 through November 30) and in the Unnamed Tributary to Stony Brook within the appropriate coldwater fisheries timing window (June 1 through September 30) unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis. Additional measures to minimize impacts on fisheries are described in section 4.6.2.3. Also, in accordance with the FERC Procedures, Algonquin would need to file with the Secretary a schedule identifying when blasting would occur within each waterbody greater than 10 feet wide and within any designated coldwater fishery.

Algonquin would restore stream beds following blasting and installation of the pipeline. Prior to backfilling, the trench would be inspected for any significant bedrock cracks or fissures. Any fissures would be filled with bentonite to seal the gap and prevent any infiltration of stream flow into the ground. Restoration of the stream bed would include backfilling the trench with sand to protect the newly installed pipeline and then replacement of appropriately sized trench spoil. Algonquin would replace the native stream bed material on top of the excavated trench-line to restore the original stream bed contours. Impacts would be temporary in nature and would be restored as near as practicable to preconstruction contours. With these measures, we conclude that blasting, if required, would not result in any significant impacts on streams.

Algonquin is continuing to consult with CTDEEP during the review of its section 401 WQC application. Algonquin has indicated it would address any impact minimization or mitigation measures for blasting in streams during the review process. Algonquin is also consulting with NYSDEC during the State's review of the New York section 401 WQC. NYSDEC has requested that Algonquin provide its in-stream blasting procedures and evaluate other methods of construction to avoid blasting in streams. Algonquin has indicated it will continue to discuss the construction method with the NYSDEC as part of the permit process.

## Horizontal Directional Drill

The primary impact that could occur as a result of the HDD method is the inadvertent release of drilling fluid (or drilling mud) directly or indirectly into the waterbody. Drilling fluid may leak through previously unidentified fractures in the material underlying the river bed, in the area of the mud pits or tanks, or along the drill path due to unfavorable ground conditions. Although drilling fluid consists of non-toxic materials, in large quantities the release of drilling fluid into a waterbody could affect fisheries or other aquatic organisms by causing turbidity in a waterbody and/or temporary coating the waterbody bed with a layer of clay. The probability of an inadvertent release is greatest when the drill bit is working near the surface.

When surface waters are crossed by HDD within bedrock, the most common way for drilling fluids to reach the surface of the river bottom is along vertical fractures. This event is commonly referred to as hydro-geologic fracture. The geotechnical borings along the alignment of the proposed Hudson River HDD crossing alignment indicated the presence of a range of soil materials including gravel, cobbles, boulders, bedrock, very soft clays, unconsolidated soil, loose sands, and sand and gravel. The results were used to develop a conceptual profile for the Hudson River HDD alignment that would place the drill path in areas of very soft clays, loose sand, and unconsolidated sediments, avoiding the gravel, cobble, boulders, and bedrock areas identified. Preliminary estimates of the potential for hydraulic fracture at the Hudson River crossing indicated a relatively high potential for fracture (potentially leading to an inadvertent return of drilling fluid), particularly during pilot hole completion. Drilling through areas of softer sediments as planned for the Hudson River HDD would shorten the amount of time required to complete the HDD operation and, thus, the amount of time inadvertent releases of drilling fluid to the river could occur. Additionally, prior to drilling Algonquin proposes to use telescoping casings on both sides of the Hudson River prior to drilling to a depth of about 90 feet. The smaller diameter steel casings would be removed prior to pullback while the larger casings would remain in place permanently. Presence of the casings would further reduce any inadvertent releases into the waterbody.

Preliminary estimates of the potential for hydraulic fracture at the Interstate 84/Still River crossing in Connecticut indicated a very low potential for fracture (potentially leading to an inadvertent return of drilling fluid). To further minimize the potential for inadvertent returns, particularly near the entry and exit locations, Algonquin proposed to install telescoping casings on both sides of the crossing. The casing would be installed to intersect the bedrock at both sides of the drill path and would minimize the potential for inadvertent returns to the ground surface near the entry and exit sides of the drill and facilitate drilling fluid recycling.

Algonquin has developed a BDP Plan (see appendix J) that describes how the HDD operations would be monitored to minimize the potential for inadvertent returns and includes general procedures for cleanup of drilling mud releases at the two HDD locations. We find the BDP Plan to be acceptable. In the event an HDD hole needed to be abandoned during construction, Algonquin would implement measures to seal the abandoned portion of the hole and drill path. Abandonment procedures would include leaving the bore hole full of bentonite slurry and soils/cuttings. The bentonite slurry and soils/cuttings would fill the void and the upper 50 to 100 feet of the bore hole would be grouted with concentrated cement. The drill pipe would be inserted into the hole to a designated distance below ground. The initial grout would be lightweight, expansive, and quick setting. A plug would then be set over a distance of about 30 feet as the volume of the abandoned hole is filled. The drill pipe would then be retracted and the grout would be allowed to set. The drill pipe or a tremie tube would then be reinserted to the top of the plug, and expansive grout would be pumped to fill the hole as the drill pipe is retracted. Algonquin would attempt to salvage a portion of the hole that was not abandoned and drill the balance of the new hole within a few feet of the existing hole, if the near surface area were abandoned. If the near surface area is still suitable for the HDD, then Algonquin would adjust the pilot hole or reaming activities downhole and continue drilling operations.

With these measures, we conclude that the HDD construction method would not significantly impact surface water resources.

### **Hydrostatic Test Water**

Algonquin developed a hydrostatic testing procedure that is included in the E&SCP and describes how the hydrostatic testing would be conducted and how the water would be discharged. During water intake, downstream flow rates would be maintained to protect aquatic life, waterbody uses, and provide downstream withdrawals of water by existing users. Algonquin is not proposing to use any chemicals for testing or for drying the pipeline following hydrostatic testing; therefore, there would be no surface water impacts due to hydrostatic testing activities. Sampling of discharge water would be conducted in accordance with Algonquin's E&SCP to document water quality at the time of discharge in accordance with applicable discharge permits. Additionally, discharge rates would be regulated using energy dissipation devices to prevent erosion, streambed scour, suspension of sediments, flooding, or excessive stream flow. Therefore, we conclude that hydrostatic testing would not significantly affect water resources.

### **Hazardous Material Spills and Contaminated Sediments**

Accidental spills and leaks of hazardous materials associated with equipment trailers, the refueling or maintenance of vehicles; and the storage of fuel, oil, and other fluids can have immediate effects on aquatic resources and could contaminate a waterbody downstream of the release point. Impacts associated with the spills or leaks of hazardous liquids would be avoided or minimized by restricting the location of refueling (at least 100 feet from a wetland or waterbody) and storage facilities and by requiring cleanup in the event of a spill or leak.

Implementation of the measures in the Algonquin's SPCC Plan would minimize the potential for surface water impacts associated with an inadvertent spill of hazardous materials. The SPCC Plan identifies preventive measures to reduce the likelihood of a spill, such as secondary containment for petroleum products, daily equipment inspection for leaks, and restrictions on the transport of potentially hazardous materials to the construction work area. The SPCC Plan also specifies measures to contain and clean up a spill should one occur. Implementation of the Applicant's SPCC Plan would adequately address the storage and transfer of hazardous materials and petroleum products, and the appropriate response in the event of a spill.

Unexpected contamination would be addressed by following the Unexpected Contamination Encounter Procedures developed by Algonquin, which we find to be acceptable. Sites would be assessed for their historical land use and by evaluating the area. If contamination is encountered, work would be stopped and appropriate cleanup measures would be employed. Work would resume only after cleanup has been completed. By following these procedures, there would be no significant impacts on surface waters if unexpected contamination is encountered.

### **Conclusion**

Pipeline construction activities would be conducted in accordance with the Algonquin's E&SCP; SPCC Plan; Unexpected Contamination Encounters Procedures; Rock Removal Plan; BDP Plan; and construction stormwater plans and permits, including the SWPPP being developed in consultation with the NYCDEP to address concerns about crossing New York City watersheds. Applicable construction stormwater BMPs would be implemented to prevent runoff from contaminated and non-contaminated sites to impaired waters. Construction activities would be temporary in nature and consist primarily of shallow excavation for pipeline installation. Waterbody crossings that do not require blasting would be completed within 24 to 48 hours and stream bed and bank contours would be restored and stabilized following construction activities. With these protective measures in place, and our additional

recommendations, we conclude that construction and operation of the Project would not result in significant impacts on surface water resources.

The operation of the new Project facilities would not result in any impacts on surface water use or quality unless maintenance activities involving pipe excavation and repair in or near streams are required. In such a case, the impacts would be similar to those described for pipeline construction.

#### **4.4 WETLANDS**

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory, 1987). Wetlands are often a source of significant biodiversity and serve a variety of functions including flood control, wildlife habitat, recreational opportunities, and improving water quality.

Wetlands in the Project area are regulated at the federal and state levels. At the federal level, the USACE has authority under section 404 of the CWA to review and issue permits for activities that would result in the discharge of dredged or fill material into waters of the United States, including wetlands. Section 401 of the CWA requires that proposed dredge and fill activities under section 404 be reviewed and certified by the designated state agency so that the proposed Project would meet state water quality standards. The designated state agencies in the Project area are the NYSDEC, CTDEEP, and MADEP (no wetlands would be affected in Rhode Island). In New York and Connecticut, wetlands are also regulated at the local level. For this Project, activities in New York will be reviewed by Rockland and Westchester Counties; the Towns of Southeast, Yorktown, Cortlandt, Haverstraw, and Stony Point; the City of Peekskill; and the Villages of Buchanan and Pomona, but Algonquin is not required to obtain local wetland permits in New York. Activities in Connecticut will be reviewed by municipal inland wetlands and watercourse agencies (IWWC). The municipal Connecticut agencies that will review Project information are the Cromwell IWWC, Danbury Environmental Impact Commission, Franklin IWWC, Lebanon IWWC, Montville IWWC, Norwich Inland Wetland, Watercourse and Conservation Commission, and Rocky Hill IWWC. Each IWWC will have an opportunity to review Project information and provide comments, but Algonquin is not required to obtain local wetland permits in Connecticut.

##### **4.4.1 Existing Wetland Resources**

Wetlands within the majority of the Project area were delineated during field surveys conducted in 2013 and are identified in table K-1 in appendix K. Algonquin delineated wetland boundaries using the methodologies described in the USACE Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2) (USACE, 2011). Portions of three wetlands located outside the permanent easement in New York and one in Connecticut were delineated using aerial photo interpretation, existing hydric soil data, and an evaluation of local hydrologic conditions and drainage patterns in the area to provide wetland boundaries because the landowner did not grant survey permission.

The proposed pipeline facilities would result in 160 wetland crossings, including 76 in New York and 84 in Connecticut. In some cases the Project facilities would include multiple crossings of the same wetland. There would be no wetland impacts in Rhode Island or Massachusetts. Detailed information about each wetland potentially affected by the Project is provided in table K-1 in appendix K. A summary of the wetland impacts associated with construction and operation of the Project is presented in section 4.4.4. No wetlands would be affected at any of the aboveground facility sites.

Algonquin proposes to use three locations for pipe and contractor ware yards. These sites are all existing industrial/commercial facilities with no wetlands present within the area proposed for use. No impacts on wetlands or waterbodies would result from the use of these sites for the Project.

Algonquin would use existing roads for temporary and permanent access along the Project route and would not impact any wetlands. In areas where wetlands are adjacent to an existing access road, construction crews would avoid the wetland.

#### **4.4.1.1 Wetland Types**

Wetland types were assigned based on the National Wetlands Inventory (NWI) classifications as described in Cowardin et al. (1979). Four basic wetland types were delineated in the Project area. Wetlands that are classified as riverine and lacustrine are listed under waterbodies in section 4.3.2. The basic wetland types that were delineated in the proposed Project area are discussed below.

##### **Palustrine Forested Wetlands**

The majority of forested wetlands identified in the Project area are classified as palustrine forested (PFO) broad-leaved deciduous wetlands, found in association with streams and seeps or as isolated depressions. These wetlands typically occur in areas where the topography is low and flat or along waterbodies. PFO wetland cover types are dominated by trees and shrubs that have developed a tolerance to a seasonal high water table. In order to be characterized as forested, a wetland must be dominated by trees and shrubs that are at least six meters tall (Cowardin et. al., 1979). PFO wetlands typically have a mature tree canopy which, depending upon the species and density, can have a broad range of understory and groundcover community components. Tree species identified in the Project area include red maple, yellow birch, black birch, green ash, slippery elm, and American elm.

##### **Palustrine Scrub-Shrub Wetlands**

The palustrine scrub-shrub (PSS) wetland cover type includes areas that are dominated by saplings and shrubs that typically form a low and compact structure less than 20 feet tall (Cowardin et. al., 1979). The structure and composition of the vegetation within this cover type may be influenced by the water regime and, where located within existing right-of-ways, by utility maintenance practices. Most of these communities are seasonally flooded and often saturated to the surface. Many of the PSS wetlands along the Project pipeline segments are associated with emergent wetlands as part of large complexes. These PSS wetlands are also the dominant along existing electric transmission right-of-ways. Shrub species identified in the Project area include speckled alder, northern arrowwood, southern arrowwood, silky dogwood, highbush blueberry, spicebush, and sweet pepperbush. Within the utility right-of-way, the invasive multiflora rose is frequently dominant along the Project routes.

##### **Palustrine Emergent Wetlands**

Palustrine emergent wetlands (PEM) are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens (Cowardin et. al., 1979). The PEM wetlands along the route include areas commonly referred to as marshes, wet meadows, and beaver flowage communities. The PEM wetland type exists on its own as well as in conjunction with other wetland types, creating a more heterogeneous wetland system. PEM wetlands are often associated with utility right-of-ways, abandoned agricultural areas, and open waterbodies. Vegetation in these wetlands along the Project route include cattail, tussock sedge, woolgrass, green bulrush, great bulrush, soft rushes, fox sedge, hop sedge, and shallow sedge. Many of the PEM wetlands along the Project routes are dominated by invasive species such as common reed, reed canary grass, and purple loosestrife.

#### **4.4.1.2 Vernal Pools**

Vernal pools are a subclass of emergent wetland that consist of intermittently to ephemerally ponded, small, shallow depressions usually located within an upland forest. They are typically flooded in spring or after a heavy rainfall, usually dry during summer, and are frequently filled again in autumn.

To identify vernal pools in all states within the Project, including New York, Algonquin evaluated wetlands within the study corridor in 2013 and 2014 based on the field methodology required in the USACE New England District. These evaluations were conducted by qualified biologists who identified areas with the potential to serve as vernal pool habitat based on an evaluation of visible vernal pool indicators. For each wetland evaluation, field scientists relied on direct evidence of amphibian breeding activity, and evidence of seasonal flooding and drying within a topographic depression not connected to a river, stream, or brook.

#### **4.4.2 Wetland Construction Procedures**

Construction of the pipeline would require 160 wetland crossings, 76 in New York and 84 in Connecticut. One of the proposed crossings located in Connecticut would be conducted using the HDD method. Construction in the remaining wetlands would be conducted in accordance with the wetland construction and mitigation measures contained in Algonquin's E&SCP. The method of pipeline construction used in wetlands would depend largely on the stability of soils at the time of construction. Where wetland soils are relatively stable, the pipeline would be installed using methods similar to those used in uplands (with addition of certain protective measures that are specific to wetlands (i.e., segregation of topsoil over the trenchline)). Upland construction techniques may include stringing and welding the pipeline within the wetland and using sideboom tractors and trackhoes within the wetland to lower and backfill the pipeline. Where wetland soils are saturated and/or inundated, the pipeline may be installed using the push-pull technique, floating technique, or carried into place and submerged into the trench. The construction right-of-way width in wetlands would generally be 75 feet wide, except in areas where additional width has been requested by Algonquin (see section 4.4.4). Wetland construction procedures are discussed in more detail in section 2.3.1.2.

#### **4.4.3 General Impacts and Mitigation**

##### **4.4.3.1 Wetlands**

Table 4.4.3-1 summarizes the impacts of the proposed Project facilities on wetlands. A detailed listing of the Project impacts on each wetland is included in table K-1 in appendix K. In total, construction of the Project would impact 52.5 acres of wetlands during construction. Of that, about 23.9 acres would be affected in New York and 28.6 acres in Connecticut. No wetlands would be affected in Rhode Island or Massachusetts. The majority of this acreage (35.5 acres) would involve PEM and PSS wetlands. These impacts would be temporary and short term. The remaining 17.0 acres of impact would be on PFO wetlands. About 2.4 acres of PFO wetland would be permanently converted to non-forested wetland during operation of the pipeline facilities. The remaining 14.6 acres of PFO wetland would be allowed to revert to preconstruction conditions following construction, but would result in long-term impacts. About 1.7 acres of non-forested wetland would be affected by operation of the pipeline facilities. There would be no wetland impacts from proposed aboveground facilities or access roads. The Project would not result in any permanent loss of wetlands.

TABLE 4.4.3-1					
Summary of Wetland Impacts Resulting from Construction and Operation of the AIM Project					
Facility/State	Total Crossing Length (feet) <sup>a</sup>	Total Wetland Impacts (acres)		Forested Wetland Impacts (acres)	
		Construction	Operation	Construction	Operation
PIPELINE FACILITIES					
New York					
Haverstraw to Stony Point Take-up and Relay	2,373.6	5.1	0.0	1.0	0.0
Stony Point to Yorktown Take-up and Relay	10,876.0	18.8	1.0	6.1	0.8
New York Subtotal	13,249.6	23.9	1.0	7.1	0.8
Connecticut					
Southeast to MLV 19 Take-up and Relay	5,435.2	8.2	0.0	2.5	0.0
Line-36A Loop Extension	1,676.2	3.1	0.9	1.1	0.6
E-1 System Lateral Take-up and Relay	8,979.2	15.6	1.7	5.2	0.6
E-1 System Lateral Loop	1,080.5	1.7	0.5	1.1	0.4
Connecticut Subtotal	17,171.2	28.6	3.1	9.9	1.6
ABOVEGROUND FACILITIES	0.0	0.0	0.0	0.0	0.0
PROJECT TOTAL	30,420.8	52.5	4.1	17.0	2.4
<sup>a</sup> Crossing length of pipeline where the pipeline center crosses the wetland. Numbers are rounded to the tenth decimal place and may not reflect the totals/subtotals presented in appendix table K-1 due to the rounding.					

Algonquin has incorporated several route and workspace modifications into its proposed Project to minimize impacts on certain wetlands and vernal pools. However, some of these adjustments, including the adjustment to avoid direct in-water impacts on Dividend Brook, caused a total net increase in Project wetland impacts from 52.3 to 52.5 acres while reducing other impacts. Table 4.4.3-1 and appendix table K-1 have been updated to reflect these wetland impact changes. Section 3.5.2 summarizes all of the route alternatives, variations, and Project design modifications evaluated after the draft EIS to minimize impacts on various resources, including waterbodies and wetlands.

Pipeline construction in New York would affect about 23.9 acres of wetlands. The majority of the affected wetlands would be PEM and/or PSS wetlands; about 7.1 acres would be PFO wetlands. Of the 7.1 acres of PFO wetlands, about 0.8 acre would be located within the new permanent right-of-way and would be subject to periodic vegetation maintenance during operation of the pipeline. Site-specific impacts on specific wetlands are discussed below.

The proposed Project would impact a large wetland system (B13-RLR-W3) between about MPs 0.8 and 1.1 of the Haverstraw to Stony Point Take-up and Relay segment. This wetland system is associated with tributaries to Minisceongo Creek. The portion of the wetland within the existing maintained right-of-way that would be used for construction is classified as PEM. The portion of the wetland within the proposed temporary construction right-of-way is classified primarily as PFO. Following construction, the PFO portions affected by construction would be restored in accordance with Algonquin's E&SCP and allowed to return to their preconstruction condition, and those portions of the existing right-of-way would be maintained as PEM wetland.



One new wetland (A14-SPLR-W101) would be located within the proposed workspace for the new Hudson River HDD alignment along the Stony Point to Yorktown Take-up and Relay segment. This wetland is a small *Phragmites*-dominated wetland. Algonquin would enclose the wetland with a silt fence to protect it during construction, and as shown in table K-1 in appendix K the Project would have no impact on the wetland.

NYSDEC requested specific information about how dewatering would be conducted during pipeline installation at wetland B13-SPLR-W26. This wetland is currently impounded by beavers and the wetland is flooded. The entire area along Lexington Avenue and Route 35 is prone to flooding during excessive precipitation events. As part of its application for section 401 WQC in New York, Algonquin provided a detailed construction plan illustrating pipeline construction staging at this wetland and an associated waterbody. Algonquin would use pumps with secondary containment for dewatering at this wetland. Discharge hoses with energy dissipation devices would be utilized to pump water into dewatering structures. The exact location of pumps, intake hoses, discharge hoses and the dewatering structures would be determined based on site-specific conditions at the time of construction. In addition, Algonquin would implement trench dewatering activities to comply with conditions of the section 401 WQC.

Pipeline construction in Connecticut would affect about 28.6 acres of wetlands. The majority of the affected wetlands would be PEM or PSS wetlands and the remaining 9.9 acres would be PFO wetlands. A total of 3.1 acres of wetlands including 1.6 acres of PFO wetlands would be located within in the new permanent right-of-way and would be subject to periodic vegetation maintenance during operation of the pipeline. All other wetland areas are located within the existing and currently maintained pipeline right-of-way.

The primary direct impact of pipeline construction and right-of-way maintenance activities on wetlands would be the short and long-term alteration of wetland vegetation. Other direct impacts associated with construction of the pipeline facilities could include changes in wetland hydrology and water quality. Trenching and backfilling activities would also directly impact wetlands. During construction, failure to segregate topsoil over the trenchline could result in the mixing of topsoil with the subsoil. This disturbance could result in altered biological activities and chemical conditions in wetland soils and could affect the re-establishment and natural recruitment of native wetland vegetation after restoration. In addition, inadvertent compaction and rutting of soils during construction could result from the movement of heavy machinery and the transport of pipe sections within the wetland areas. The resulting alteration of the natural hydrologic patterns could inhibit seed germination or increase the potential for siltation in wetlands. The discharge of stormwater, trench water, or hydrostatic test water could result in silt-laden water entering a wetland and cause the release of chemical and nutrient pollutants from sediments. Construction clearing activities and disturbance of wetland vegetation could also affect the wetland's capacity to buffer flood flows and/or control erosion. Secondary or indirect impacts could include reduced riparian buffers, disturbance to adjacent habitats, and incremental fragmentation of forested wetlands.

These effects would be greatest during and immediately following construction. The majority of these effects would be short term in nature and would cease shortly after the wetlands are restored. Following construction, new wetland vegetation would become established and eventually revert to a plant community similar to the one that existed prior to construction. In PEM wetlands, the herbaceous vegetation would regenerate quickly (within 1 to 3 years). Following revegetation, the permanent impact on emergent vegetation in the maintained right-of-way would be minimal because these areas consist of and would remain as open and herbaceous communities.

The duration of the impact on PSS and PFO wetlands would be longer. Woody vegetation may take several years to regenerate and the re-establishment of large woody vegetation would be precluded on a portion of the permanent right-of-way by routine vegetation maintenance activities during pipeline operation. This would permanently convert previously PFO wetland areas within the maintained right-of-way to non-forested wetlands and PSS wetland areas to PEM wetlands.

In its comments on the draft EIS, the EPA disagreed with our statement that impacts on wetlands from Project construction would not result in the permanent loss of wetlands and that no wetlands would be filled, asserting that backfilling in wetlands would be a permanent impact on wetlands. We maintain that trenching and backfilling in wetlands would be temporary impacts where wetlands are not converted to different wetland types. The conversion from one vegetation cover type to another could result in changes in wetland functions and values. In general, however, it is expected that the affected wetlands would continue to provide important ecological functions such as sediment/toxicant retention, nutrient removal and transformation, flood attenuation, groundwater recharge/discharge, and wildlife habitat.

Algonquin proposes to use the HDD method to avoid impacts on one wetland associated with the Interstate 84/Still River crossing in Connecticut. Use of the HDD method would eliminate the need for mechanical clearing, trenching, and the operation of heavy construction equipment within the wetland. Activities between HDD entry and exit points would be limited to foot traffic required for the placement of wire grids needed to guide the drill alignment.

Algonquin would mitigate unavoidable construction-related impacts on wetlands by implementing the wetland protection and restoration measures contained in its E&SCP. Specific measures that would be implemented, and included in the environmental analysis, include:

- locating ATWS at least 50 feet from wetland boundaries except where site-specific conditions warrant otherwise and FERC approval has been obtained;
- cutting vegetation above ground level, leaving existing root systems in place, and limiting stump removal to directly over the trenchline except where these activities are required outside the trenchline area for safety reasons;
- returning wetland contours and drainage patterns to their preconstruction configurations;
- installing sediment barriers immediately after initial ground disturbance within the right-of-way at the edge of the boundary between wetlands and uplands, across the entire right-of-way immediately upslope of the wetland boundary, and along the edge of the right-of-way as necessary to contain spoil within the right-of-way and to protect adjacent off right-of-way wetland areas;
- segregating the top 12 inches of topsoil from the trenchline in wetlands, except in areas where standing water is present or soils are saturated or frozen. Immediately after backfilling is completed, the segregated topsoil would be restored to its original location to expedite revegetation;
- prohibiting the use of rock, soil imported from outside the wetland, tree stumps, or brush riprap to stabilize the right-of-way;

- using low ground weight equipment and operating equipment on timber riprap, prefabricated equipment mats, or terra mats on saturated soils or where standing water is present;
- installing trench plugs as necessary to maintain the original wetland hydrology;
- prohibiting the use of lime, or fertilizer during the restoration of wetlands; and
- seeding freshwater wetlands with a wetland seed mix specified by relevant land management agencies unless standing water is present.

Algonquin would minimize wetland impacts during pipeline operation by:

- limiting vegetation maintenance in wetlands to a 10-foot-wide herbaceous corridor centered over the pipeline, and the cutting and removal of trees and shrubs greater than 15 feet in height that are within 15 feet of the pipeline centerline; and
- prohibiting the use of herbicides or pesticides within 100 feet of wetlands or waterbodies except as specified by the appropriate land management or state agency.

As discussed above, secondary or indirect impacts could include reduced riparian buffers, disturbance to adjacent habitats, and incremental fragmentation of forested wetlands. In its comments on the draft EIS, the EPA requested additional detail be provided on the types and amounts of secondary impacts on wetlands. In consultation with the USACE, NYSDEC, and CTDEEP, Algonquin calculated potential secondary impact edge effects on wetlands. A total of about 0.8 acre of secondary impacts were identified in New York. Also, a total of 1.9 acres of secondary PEM impacts and 16.3 acres of secondary PSS/PFO impacts were identified in Connecticut.

The use of our Procedures, which Algonquin incorporated into its E&SCP, would minimize any secondary impacts associated with construction and operation of the Project. Specifically, the Procedures direct a number of impact minimization measures designed to limit the area of disturbance, limit the construction traffic through wetlands, and protect adjacent wetlands. In addition, the Procedures include post-construction restoration and prescribe monitoring to ensure restoration. With these measures in place, we consider the potential for secondary impacts to be low.

We do acknowledge that fragmentation is a consequence of pipeline construction. The Project would increase the area of affected wetlands and move the location of the edge between fragmented and undisturbed habitat. The loss and/or conversion (including the moving of edges) of wetland habitat could increase the amount of stress, injury, and mortality experienced by wildlife. However, because most of the facilities affecting wetlands would be installed within Algonquin's existing right-of-way, only incremental fragmentation, for example, would occur within PFO wetlands as a result of expanding the existing right-of-way. Importantly, the Project would move the edge, but would not create new edge.

Algonquin would also comply with any additional conditions of the wetland permits that could be issued by the USACE, NYSDEC, and CTDEEP. This includes Algonquin committing to provide compensatory mitigation for the permanent conversion of 0.8 acre of PFO wetlands to a non-forested wetland type in New York and 1.6 acres of PFO wetlands to a non-forested wetland type in Connecticut. Details of the compensatory mitigation are described in greater detail in section 4.4.5.

In accordance with its E&SCP and the Conceptual Mitigation Plan (see appendix M), Algonquin would conduct post-construction monitoring. Monitoring efforts would include documenting occurrences of exotic invasive species to compare to preconstruction conditions. In the event that nuisance plant species spread into the new right-of-way areas where not documented prior to construction, Algonquin would implement removal and eradication measures. Additional post-construction wetland monitoring requirements would be included as conditions of the section 404 CWA permits that could be issued by the New York and New England USACE Districts, including an adaptive management plan.

Post-construction monitoring would, at minimum, be conducted annually for 3 years for all wetlands affected by construction to assess the condition of revegetation and the success of restoration. According to Algonquin's Invasive Plant Species Control Plan<sup>2</sup>, post-construction monitoring of invasive species would be conducted for at least 4 years. Wetland revegetation would be considered successful when the cover of herbaceous and/or woody species is at least 80 percent of the type, density, and distribution of the vegetation in adjacent wetland areas that were not disturbed by construction. The USACE New York District has indicated that a minimum of 5 years of post-construction monitoring for wetlands and invasive species would be required and that an 85 percent revegetation cover would be used to determine successful revegetation. If wetlands were not showing signs of re-establishment of native wetland vegetation, Algonquin would consult with the appropriate federal and state agencies to develop a remedial action plan and produce quarterly monitoring reports. Upon determination of successful revegetation, sediment barriers would be removed and disposed of properly in accordance with the E&SCP.

Construction impacts would be mitigated in accordance with Algonquin's E&SCP and Invasive Plant Species Control Plan. Wetlands disturbed by construction would be restored and monitored, and appropriate compensatory mitigation would be provided to offset the permanent conversion of PFO wetlands to PEM wetlands. Therefore, we conclude that the Project would not result in adverse impacts on the functions that wetlands provide.

#### **4.4.3.2 Vernal Pools**

Algonquin identified 11 vernal pools in the Project study corridor (300 feet) including 7 in New York, 3 in Connecticut, and 1 in Rhode Island (see table 4.4.3-2). No vernal pools were identified in Massachusetts. Two vernal pools in Cortlandt, New York are located within the temporary construction area for the Project. About 1,948 square feet of vernal pool habitat would be affected by Project construction. The remaining nine vernal pools were identified within the study corridor, but are not located within the proposed construction area and would not be directly affected by the Project.

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<sup>2</sup> Algonquin's Invasive Plant Species Control Plan was included as Appendix 3F to Resource Report 3 in its February 28, 2014 application (Accession No. 20140228-5269). The plan can be viewed on the FERC website at <http://www.ferc.gov>. Using the "eLibrary" link, select "Advanced Search" from the eLibrary menu and enter 20140228-5269 in the "Numbers: Accession Number" field.

TABLE 4.4.3-2					
Vernal Pools Along the Pipeline Facility Study Corridor for the AIM Project					
Facility/State/Vernal Pool	MP	Town	Description	Construction (square feet) <sup>a</sup>	Operation (square feet) <sup>b</sup>
<b>PIPELINE FACILITIES</b>					
<b>New York</b>					
Stony Point to Yorktown Take-up and Relay					
B13-SPLR-VP4	5.6	Cortlandt	Vernal pool located within the 300-foot study corridor, not directly affected by construction or operation	0.0	0.0
B13-SPLR-VP6	5.8	Cortlandt	Vernal pool located within the 300-foot study corridor, not directly affected by construction or operation	0.0	0.0
B13-SPLR-VP11	6.5	Cortlandt	Vernal pool located within the 300-foot study corridor, not directly affected by construction or operation	0.0	0.0
B13-SPLR-VP8	6.8	Cortlandt	Vernal pool located within the temporary workspace of the Project	1,770.0	0.0
B13-SPLR-W51	7.2	Cortlandt	Vernal pool located along TAR 7.6, outside of the study corridor, not directly affected by construction or operation	0.0	0.0
B13-SPLR-VP19	8.3	Cortlandt	Vernal pool located within the 300-foot study corridor, not directly affected by construction or operation	0.0	0.0
A13-SPLR-VP2	8.7	Cortlandt	Vernal pool located within the temporary workspace of the Project	177.8	0.0
<b>Connecticut</b>					
Southeast to MLV 19 Take-Up and Relay					
A13-SELR-VP4	2.7	Danbury	Vernal pool located along the edge of the temporary workspace, not directly affected by construction or operation. A workspace adjustment has been incorporated into in the proposed Project design, which moves the workspace further from this vernal pool (see section 3.5.2).	0.0	0.0
E-1 System Lateral Take-Up and Relay					
A13-ELR-VP6	2.7	Lebanon	Vernal pool located within the 300-foot study corridor, not directly affected by construction or operation	0.0	0.0
A13-ELR-VP13	6.9	Franklin	Vernal pool located within the 300-foot study corridor, not directly affected by construction or operation. A workspace adjustment has been incorporated into the proposed Project design, which avoids the wetland associated with this vernal pool (see section 3.5.2).	0.0	0.0
<b>ABOVEGROUND FACILITIES</b>					
<b>Rhode Island</b>					
Burrillville Compressor Station					
A13-BCS-VP1	NA	Burrillville	Vernal pool located within the compressor station study area, not directly affected by construction or operation	0.0	0.0
<sup>a</sup> The amount of area (in square feet) of the feature that would be affected by the construction workspace of the Project. These areas would be allowed to revegetate. <sup>b</sup> The amount of area (in square feet) of the feature that would be permanently converted from forested upland vegetative habitat to an open land vegetative habitat. NA = Not applicable					

The primary effects of construction-related activity on vernal pools located in the temporary workspace would be similar to those described for emergent wetlands. However, vernal pools may also be affected by the conversion of adjacent forested habitat to early successional stage habitats. Impacts from pipeline maintenance activities would include the periodic removal of emergent and woody vegetation. To minimize direct and indirect or secondary impacts during construction, all vernal pools would be treated as wetlands and protected by adherence to the measures outlined in Algonquin's E&SCP. Section 4.4.3.1 discusses secondary impacts on wetlands and mitigation measures that would be used to minimize impacts on these features. These measures would also protect vernal pools from siltation and stormwater runoff, and provide a barrier to alert construction workers of the presence of sensitive habitat.

Algonquin submitted wetland and water quality permit applications to the USACE, CTDEEP, and NYSDEC in March and April 2014. As part the section 401 WQC application to the NYSDEC, Algonquin included site-specific crossing plans for the two vernal pools in New York. These site-specific plans illustrate the placement of sedimentation and erosion controls. Because the permits are currently under review with the applicable agencies, **we recommend that:**

- **Prior to construction in the vicinity of the two vernal pools in New York, Algonquin should file with the Secretary, for review and written approval of the Director of the OEP, revised site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools as required through the permit review process with the applicable agencies.**

#### **4.4.4 Alternative Measures Requiring FERC Approval**

The E&SCP stipulates that the construction right-of-way width in wetlands be limited to 75 feet and that all ATWS should be located at least 50 feet from wetlands except where an alternative measure has been requested by Algonquin and approved by the FERC. Algonquin identified numerous areas where it believes a 75-foot right-of-way is insufficient to accommodate wetland construction and a wider right-of-way is necessary. Table 4.4.4-1 lists the locations where Algonquin has requested a wider construction right-of-way and the site-specific rationale for the request. Based on our review of the requests for a wider construction right-of-way, we have determined that Algonquin has provided sufficient justification for the use of additional workspace in those wetland areas. Algonquin also identified locations where it believes site-specific conditions do not allow a 50-foot setback of ATWS from wetlands. Table 4.4.4-2 lists the locations where Algonquin requested less than a 50-foot setback from a wetland and the site-specific rationale for the requested modification from our Procedures. Based on our review, we have also determined that the requested modifications are justified.

In addition, Algonquin's E&SCP is not consistent with section VI.B.2.d of the FERC Procedures. Section VI.B.2.d requires applicants to minimize the length of time that topsoil is segregated and the trench is open. In accordance with section VI.B.2.b of the FERC Procedures, when wetlands are dry enough to support skids and pipe, the pipeline would be assembled in the wetlands. In these instances, Algonquin proposes to excavate the trench prior to the pipeline assembly. Otherwise, after the pipeline is assembled, equipment would not be able to access the area where trenching would occur nor would there be sufficient construction workspace to safely excavate the trench. Excavating the trench prior to stringing and assembling the pipe segments in non-saturated wetlands is generally acceptable; however, a blanket approval for implementing this practice would not provide the site-specific justification required by our Procedures. Therefore, Algonquin completed an evaluation of wetlands and identified those that meet the criterion of non-saturated based on site-specific information collected during field surveys. Appendix K includes information on each wetland crossing, including whether it is considered saturated or non-saturated, and also provides the site-specific justification required by our Procedures. We agree with this assessment and have determined that the requested modification is justified.

TABLE 4.4.4-1 Locations Where the Construction Right-of-way is Greater Than 75 Feet in a Wetland			
State, Facility, Wetland ID	MP	Crossing Width (>75 Feet Right-of-Way)	ATWS Justification <sup>a</sup>
<b>NEW YORK</b>			
<b>Haverstraw to Stony Point Take-up and Relay</b>			
B13-RLR-W2	0.5	25	A
B13-RLR-W3	0.8	10	B
B13-RLR-W4	1.6	10	B
B13-RLR-W9	3.0	55	B and C
B13-RLR-W10	3.0	30	B and D
<b>Stony Point to Yorktown Take-up and Relay</b>			
B13-SPLR-W50	4.4	25	B
B13-SPLR-W203	4.6	25	B
B13-SPLR-W205	4.7	25	B and E
B13-SPLR-W202	4.8	25	B
B13-SPLR-W16	5.1	25	B
B13-SPLR-W16	5.2	25	B
B13-SPLR-W16	5.3	25	B
B13-SPLR-W17	5.6	25	B
B13-SPLR-W2	5.9	35-135	B
B13-SPLR-W3	6.0	25	B
B13-SPLR-W7	6.7	25	B
B13-SPLR-W8	6.8	25	B
B13-SPLR-W12	7.3	25	B
B13-SPLR-W13	7.6	25	B
B13-SPLR-W14	8.2	25	B
B13-SPLR-W15	8.4	25	B
B13-SPLR-W2	8.5	10	B
B13-SPLR-W18	8.8	10	B
B13-SPLR-W21	10.3	265 at greatest extent, necks down to 75	F
B13-SPLR-W25	10.8	45	B and G
B13-SPLR-W41	11.0	25	B
B13-SPLR-W26	11.1	25	B
B13-SPLR-W27	11.5	25	B
B13-SPLR-W28	11.7	25	B
B13-SPLR-W29	12.0	25	B



TABLE 4.4.4-1 (cont'd)			
Locations Where the Construction Right-of-way is Greater Than 75 Feet in a Wetland			
State, Facility, Wetland ID	MP	Crossing Width (>75 Feet Right-of-Way)	ATWS Justification <sup>a</sup>
<b>CONNECTICUT</b>			
<b>Southeast to MLV-19 Take-up and Relay</b>			
B13-SELR-W8	0.2	10	B
B13-SELR-W9	0.7	10	B
A13-SELR-W1	1.0	10	B
A13-SELR-W2	1.2	60	B
A13-SELR-W3	1.2	55	B
B13-SELR-W10	2.1	10	B
A13-SELR-W4	2.6	10	B
A13-SELR-W6	3.0	10	B
B13-SELR-W3	3.5	10	B
B13-SELR-W4	3.7	10	B
B13-SELR-W5	3.8	10	B
B13-SELR-W7	4.1	10	B
<b>Line-36A Loop Extension</b>			
B13-CCS-W1	0.0	10	B
B13-CLR-W2	0.7	10	B
B13-CLR-W3	1.2	10	B
B13-CLR-W4	1.3	10	H
<sup>a</sup> A = Extra workspace required to facilitate wetland topsoil, wetland subsoil segregation through the short length of wetland crossing. This would allow the saturated wetland soils to be stockpiled within the wetland rather than relaying the wetland soils to an upland area. Determining the time period in which the wetland subsoil would be dry is not possible as the wetland area is saturated by a hill-side spring and run-off from the surrounding watershed. B = Extra workspace required for spoil storage due to saturated subsoil and the use of heavy equipment required to install large diameter pipe. C = Algonquin would install the pipeline by using the open-cut method. D = Culvert Replacement E = Road crossing F = Extra workspace required for saturated soils and the crossing of the Catskills Aqueduct. Extra workspace is also necessary due to the proximity of the existing Cortlandt M&R Station. G = Extra workspace required for transition of the "working side" of the right-of-way from the southern side of the centerline to the northern side. H = Extra workspace required because wetland boundaries are crossing the right-of-way at oblique angles, upland inclusions within the wetland boundaries, and waterbody crossings within the wetland boundaries. These factors would require additional space for spoil storage and segregation.			

TABLE 4.4.4-2				
Locations of Additional Temporary Workspace Within 50 Feet of a Wetland Along the AIM Project				
State, Facility, Wetland ID	ATWS MP	ATWS Size (acres)	Distance From Resource	Justification
<b>NEW YORK</b>				
<b>Haverstraw to Stony Point Take-up and Relay</b>				
B13-RLR-W3	1.1	0.5	0	This area is required for spoil storage at Minisceongo Creek, associated wetland crossing (B13-RLR-W3), and crossing of Calls Hollow Road.
B13-RLR-W9 B13-RLR-W10	3.0	0.3	0-20	This area is required for spoil storage at the Cedar Pond Brook and associated wetland crossing, and it is required for the crossing of Highway 210, which also intersects Johnson Drive nearby.
B13-RLR-W10	3.0	0.1	40	This area is required for spoil storage at the wetland and stream crossing, and it is also required for the crossing of Cedar Flats Road. Extra workspace is also necessary due to the proximity of the existing Stony Point Meter Station.
<b>Stony Point to Yorktown Take-up and Relay</b>				
A14-SPLR-W101	3.0	0.8	0	This area is required for the Hudson River HDD crossing. The wetland would be located within the workspace, but would be fenced and avoided.
B13-SPLR-W17	5.6	0.1	0	Extra workspace required for saturated soils, working around existing development and constraints associated with proximity to Dickey Brook.
B13-SPLR-W2	5.9	1.4	0	This area is required for crossing extensive wetland system with saturated soils, Dickey Brook, and the Briarcliff Peekskill Parkway.
B13-SPLR-W7	6.7	0.2	5	This area is required to avoid direct impacts on a residence.
B13-SPLR-W7	6.7	0.2	20	This area is required for the crossing of Washington Street which abuts the edge of the wetland.
B13-SPLR-W12	7.4	0.2	0	Extra workspace required for saturated soils.
A13-SPLR-W2	8.5	0.2	30	This area is required for the crossing of Maple Avenue which abuts the edge of the wetland.
A13-SPLR-W2	8.6	0.1	40	Extra workspace required for saturated soils associated with the extensive wetland system.
A13-SPLR-W2 B13-SPLR-W18	8.8	0.4	40	Extra workspace required for saturated soils associated with the extensive wetland system.
A13-SPLR-W4	9.2	0.1	25	This area is required for the crossing of Diamond Avenue and also necessary due to the proximity of residences.
B13-SPLR-W43 B13-SPLR-W206	9.6	0.1	0	Extra workspace required for saturated soils and the crossing of Forest Avenue and proximity of residences.

TABLE 4.4.4-2 (cont'd)				
Locations of Additional Temporary Workspace Within 50 Feet of a Wetland Along the AIM Project				
State, Facility, Wetland ID	ATWS MP	ATWS Size (acres)	Distance From Resource	Justification
B13-SPLR-W20	9.9	0.5	45	Extra workspace required for saturated soils and because of its proximity to a residential cul de sac.
B13-SPLR-W22	10.5	0.2	0	Extra workspace required for saturated soils and the crossing of Croton Road.
B13-SPLR-W23	10.7	0.1	0	Extra workspace required for saturated soils and the crossing of Baron de Hirsh Road.
B13-SPLR-W41	11.0	0.1	30	Extra workspace needed for saturated soils and Lexington Road crossing.
<b>CONNECTICUT</b>				
<b>Southeast to MLV-19 Take-up and Relay</b>				
B13-SELR-W8	0.4	0.6	25	Extra workspace needed for saturated soils and for multiple road crossings.
A13-SELR-W4	2.7	0.1	5	Extra workspace required for multiple road crossings, extensive wetland crossing with saturated soils, and proximity to existing development.
<b>Line-36A Loop Extension</b>				
B13-CLR-W2	0.8	0.1	2	Workspace is required to minimize direct workspace impacts on the main channel of Dividend Brook.
<b>E-1 System Lateral Take-up and Relay</b>				
B13-ELR-W200	0.0	0.1	0	Workspace is required for crossing Highway 289 and work in wetland.
A13-ELR-W1	0.7	0.1	20	Workspace is required for crossing Susquetonscut Brook and wetland which intersect on either side of a hill in the right-of-way.
A13-ELR-W2	1.9	0.1	0	Workspace is required in this area where the right-of-way crosses Highway 207, Susquetonscut Brook and associated wetland.
A13-ELR-W6	2.7	0.1	20	Workspace is required to minimize direct workspace impacts on the main channel of Susquetonscut Brook.
B13-ELR-W22	7.3	0.5	0	This area is required for spoil storage at the wetland and Johnny Cake Brook crossing, and it is also required for the crossing of Route 32. Extra workspace is also necessary due to the proximity of the existing Franklin Meter Station.
B13-ELR-W22	7.3	1.2	0	This area is required for spoil storage at the wetland and Johnny Cake Brook crossing, and it is also required for the crossing of Route 32. Extra workspace is also necessary due to the proximity of the existing Franklin Meter Station.

In addition, for the take-up and relay segments of the Project, Algonquin would replace the existing pipeline with a larger diameter pipeline. This would involve excavating a trench to remove the existing pipe followed by the removal of the pipe. The removed pipe would then be transported away from the construction work area. The removal activity would be conducted using a distinct construction

crew separate from the pipeline installation crew. As the assembly-line construction process continues forward, the pipeline installation crew would expand the trench wider and deeper (as appropriate) to accommodate the new, larger diameter pipeline and install the replacement pipe at about the same location as the existing pipe using standard construction methods. In all wetland areas regardless of type, the existing pipeline must be removed first using wetland crossing procedures (e.g., topsoil/subsoil segregation, use of mats, etc.). Therefore, we agree that section VI.B.2.d would not apply to the take-up and relay segments of the Project. However, due to the potential for water quality effects on wetlands from erosion and sedimentation **we recommend that:**

- **Prior to construction along the take-up and relay portions of the Project, Algonquin should file with the Secretary a revised E&SCP, for review and written approval of the Director of OEP, adding to the responsibilities of the EI to inspect all erosion control devices and sediment barriers on a daily basis along wetlands for the take-up and relay segments, even when active construction and/or equipment operation is not occurring at a specific wetland location.**

#### **4.4.5 Compensatory Mitigation**

The proposed facilities in New York, Connecticut, Rhode Island, and Massachusetts would not result in the permanent loss of any wetland (i.e., conversion to upland). However, a total of 52.5 acres of wetlands would be impacted in New York and Connecticut by construction of the proposed Project. No wetlands would be impacted by Project facilities in Rhode Island or Massachusetts. The majority of wetland impacts would be on PEM and PSS wetlands, with only 17.0 acres of PFO wetland impacts. In most cases, the PFO wetlands would be allowed to return to their preconstruction condition. About 2.4 acres of PFO wetlands would be permanently converted to non-forested conditions as a result of Project operations. About 0.8 acre of this would be in New York and the remaining 1.6 acres would be in Connecticut. Algonquin would provide mitigation for the permanent conversion of PFO wetlands to non-forested wetlands in New York and Connecticut and the USACE expects that additional compensation may be necessary for temporal loss of aquatic habitat function associated with the discharge of temporary fill and secondary project impacts.

Algonquin developed a Final Wetland Mitigation Plan for the Project (see appendix M). As part of that plan, Algonquin proposed to provide compensatory mitigation for both the temporary impacts and permanent conversion of PFO wetlands to another cover type. In Connecticut, wetland impacts that require mitigation at the state level are determined on a case-by-case basis. To satisfy USACE requirements for the New England District, Algonquin proposes to make a contribution to an approved in-lieu fee program in Connecticut. However, the CTDEEP is constrained from formally accepting in-lieu fees as compensatory mitigation for unavoidable wetland impacts. CTDEEP has agreed that, in addition to the proposed construction-period mitigation measures, an improved invasive species plan would be sufficient to the CTDEEP mitigation package (see section 4.5.4.1). The USACE has agreed to accept the in-lieu payment proposed under their requirements. Algonquin is continuing to coordinate with the USACE and CTDEEP to finalize payment to the in-lieu fee program and managing invasive species in Connecticut, respectively.

The USACE New York District would require on-site restoration for temporary PFO wetland impacts and would require off-site mitigation for the permanent conversion of PFO wetlands within the maintained right-of-way. Off-site mitigation must be in-kind, located in the same watershed as the impact, and provided at a 2:1 ratio. A mitigation plan for New York is included as part of appendix M. Onsite restoration for temporary PFO wetland impacts in New York would include restoration of approximately 6.3 acres of small areas of forested wetland located in temporary workspace outside the permanent pipeline right-of-way. Restoration would include select re-planting efforts combined with

invasive species control and post plant monitoring. All plants would be native and locally sourced. All trees would be potted nursery stock with a minimum height of 24 inches. Algonquin would seek to plant 1.5 times the pre-construction number of trees cleared from each wetland.

For offsite mitigation, Algonquin has proposed the Junior Lake Enhancement Project in Yorktown, New York. Junior Lake is an approximately 3.4- acre site located within Memorial Park with a manmade pond and wetlands, and a fringe of riparian trees and shrubs. Enhancement opportunities at the park include; forested wetland enhancement, mixed forest and shrub wetland enhancement, and riparian wetlands and upland buffer enhancement around the pond. Algonquin created an offsite mitigation work plan as part of appendix M. This work plan includes information of invasive species management, planting specifications, coarse woody debris, buffers, and a proposed schedule.

## **Conclusions**

As discussed in section 4.4.3.1, based on the avoidance and minimization measures developed by Algonquin, including the E&SCP, we conclude that impacts on most wetland resources would be minimal and would be temporary in duration. Also, Algonquin's implementation of a final, agency-approved Wetland Mitigation Plan, would further offset any adverse impacts on wetland functions that would result from the permanent conversion of 0.8 acre of PFO wetlands to a non-forested wetland type in New York and 1.6 acres of PFO wetlands to a non-forested type in Connecticut. The USACE, the NYSDEC, and the CTDEEP would review and incorporate the Final Wetland Mitigation Plan into project permits.

## **4.5 VEGETATION**

### **4.5.1 Existing Vegetation Resources**

Ecoregions are areas that have similar environmental resources and characteristics, including geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology (EPA, 2013). Classification at the ecoregion level describes the broad-scale environmental factors that contribute to the dominant natural vegetation that may be present within a particular region. The AIM Project facilities would be located in three EPA ecoregions: the Northeastern Highlands, Northeastern Coastal Zone, and Atlantic Coastal Pine Barrens Ecoregions (USGS, 2013).

All of the Project facilities in New York would be located in the Northeastern Highlands Ecoregion. The Northeastern Highlands Ecoregion is an area with topography ranging from low mountains in portions of southern New York, western Connecticut, and western Massachusetts, to open high hills in Vermont, New Hampshire, and Maine (Kambly, 2013). The ecoregion also shows many remnants of glaciation, including rocky soils, glacial lakes, and wetlands. The ecoregion is generally sparsely populated, and land cover in the region is largely forested with naturally occurring northern hardwood and spruce fir forests growing on nutrient poor soils (USGS, 2013).

With the exception of the existing Middleborough M&R Station in Plymouth County, Massachusetts, all of the Project facilities in Connecticut, Rhode Island, and Massachusetts would be located within the Northeastern Coastal Zone Ecoregion. The Northeastern Coastal Zone Ecoregion has relatively low but irregular topography that was created by glaciation. Vegetative communities naturally consist of hardwood and mixed forests and smaller areas of inland and coastal wetlands. Land use is predominantly forested and urban (Auch, 2013).

The Middleborough M&R Station would be located in southeastern Massachusetts, which is part of the Atlantic Coastal Pine Barrens Ecoregion. This ecoregion is found along the coastal plain from Massachusetts to New York. Natural ecosystems present within this ecoregion include cedar swamps, pitch pine and oak forests, sphagnum bogs, coastal salt ponds, dune systems, and maritime grasslands (Sohl, 2013). Portions of this ecoregion are highly urbanized.

The vegetative cover types within the Project area are consistent with typical plant communities found in New York, Connecticut, Rhode Island, and Massachusetts. Plant community types along the proposed pipeline routes and at aboveground facility sites were determined based on a review of aerial photography, existing land use classifications, and field surveys. Field surveys for wetlands and waterbodies were completed in January 2014, and encompassed all proposed construction work areas. During these surveys, in addition to wetland vegetation, field observations and notes were made to identify the upland vegetation communities and their associated habitats. Descriptions of existing typical vegetative cover types in the Project area are based on the field observations and the natural community classification systems described in *Draft Ecological Communities of New York State* (Edinger et al., 2002), *The Vegetation of Connecticut: A Preliminary Classification* (Metzler and Barrett, 2006), and *Classification of the Natural Communities of Massachusetts* (Swain and Kearsley, 2011).

#### 4.5.1.1 Pipeline Facilities

About 13 percent (58.0 acres) of the land that would be required for construction and operation of the pipeline facilities is unvegetated industrial/commercial land. Of the vegetated areas, forested upland is the most common vegetation type that would be affected by the pipeline followed by open upland (see section 4.5.4). The common species associated with each of these cover types is described below.

##### Forested Uplands

Typical forested upland community types in the Project area include, but are not limited to, dry-mesic inland mixed oak forest, Appalachian oak-hickory forests, successional northern hardwood forests, and chestnut oak forests (Edinger et al., 2002).

In New York, forested upland vegetation along the Project pipeline routes is best classified as dry-mesic inland mixed oak forest, which is typically dominated by northern red oak (*Quercus rubra*), white oak (*Quercus alba*), and eastern black oak (*Quercus velutina*) (Breden, 1989). Forested vegetation on uplands along the pipeline routes is mostly dominated by northern red oak, chestnut oak (*Quercus prinus*), white oak, and other oaks (*Quercus* spp.), sweetgum (*Liquidambar styraciflua*), American beech (*Fagus grandifolia*), and shagbark hickory (*Carya ovata*). Chestnut oak forests crossed by the Project in Rockland County, New York are considered to be a significant natural community within the state (New York Natural Heritage Program [NYNHP], 2013). Chestnut oak forests can be found within the Project area along the Haverstraw to Stony Point Take-up and Relay and a portion of the Stony Point to Yorktown Take-up and Relay segments. See section 4.5.2 for more information regarding this community type.

In Connecticut, forested upland vegetation along the pipeline routes is best classified as beech-maple mesic forests and successional northern hardwood forests. Beech-maple mesic forests are hardwood forests with sugar maple (*Acer saccharum*) and beech (*Fagus* spp.) co-dominance. Successional northern hardwood forests in Connecticut are hardwood or mixed forests that occur on sites that have been cleared or otherwise disturbed. Common tree species identified during field surveys along the pipeline routes included red maple (*Acer rubrum*), American beech, red oak, red cedar (*Juniperus virginiana*), black cherry (*Prunus serotina*), and eastern hemlock (*Tsuga canadensis*). Species commonly observed in the understory include multiflora rose (*Rosa multiflora*) and red raspberry (*Rubus idaeus*).

In Rhode Island, forested upland vegetation is limited to the Burrillville Compressor Station and is best classified as a Northern Hardwood/Hemlock/White Pine forest. Northern Hardwood/Hemlock/White Pine communities are closed canopy forests dominated by a mix of evergreen and deciduous trees, with sparse shrub and herbaceous layers (Massachusetts Division of Fisheries and Wildlife [MDFW], 2013). Common tree species identified during field surveys at the compressor station included red maple, red oak, yellow birch (*Betula alleghaniensis*), eastern hemlock, and white pine (*Pinus strobus*). The

understory includes sapling and shrub white pine, red maple and American beech with some common barberry (*Berberis vulgaris*) and highbush blueberry (*Vaccinium corymbosum*) shrubs. Canada mayflower (*Maianthemum canadense*) is a common groundcover in these forested areas.

In Massachusetts, forested upland vegetation in the Project area is limited to the Assonet and West Roxbury M&R Stations (see section 4.5.1.2).

### **Open Uplands**

The proposed pipeline segments would cross primarily open upland areas associated with the existing, maintained pipeline rights-of-way in New York and Connecticut. Open upland communities can generally be subdivided into the following vegetation communities:

- grasslands – communities dominated by grasses and sedges with less than 50 percent shrub cover, sometimes with scattered trees;
- meadows – plant communities with co-dominant forbs, sedges, grasses and shrubs, sometimes with scattered trees; and
- shrublands – plant communities that have more than 50 percent shrub cover (Edinger et al., 2002).

Much of the Project pipeline segments would be located within or parallel to existing utility rights-of-way. In other locations, the pipeline segments would be located along an existing roadway or in previously disturbed developed areas. Vegetation management practices along rights-of-way, roadways, or other previously disturbed areas typically result in early successional vegetative cover that ranges from early successional upland scrub-shrub to field and roadside habitats.

Species observed in the open, upland areas within the existing pipeline rights-of-way throughout the AIM Project area included red fescue (*Festuca rubra*), common milkweed (*Asclepias syriaca*), Timothy-grass (*Phleum pratense*), red clover (*Trifolium pratense*), white clover (*T. repens*), garlic mustard (*Alliaria petiolata*), Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Toxicodendron radicans*).

### **Wetland Vegetation Communities**

Wetland vegetation community types observed along the pipeline facilities included PFO wetlands, PSS wetlands, and PEM wetlands. These wetland vegetation types and the potential impacts on these communities are described in detail in section 4.4.

#### **4.5.1.2 Aboveground Facilities**

About 34 percent (32.2 acres) of the land that would be required for construction and operation of aboveground facilities would be unvegetated industrial/commercial land. Portions of some aboveground facility sites contain forested upland and open upland communities. In general, construction and operation of new proposed aboveground facilities and changes to existing facilities would primarily affect open upland communities; however, in a few locations, forested land may be affected. The new Assonet M&R Station would be located in an area of mixed oak forest interspersed with shrub/scrub stands. The dominant tree species are black oak, red oak, pignut hickory (*Carya glabra*), white ash (*Fraxinus americana*), and sugar maple. The shrub/scrub understory is dominated by multiflora rose and autumn olive (*Elaeagnus umbellata*). The West Roxbury M&R Station would be located in an old quarry that has been re-vegetated. The dominant tree species include sugar maple, shagbark hickory, black locust



(*Robinia pseudoacacia*), and red oak. The understory is a mix of multiflora rose and glossy buckthorn (*Frangula alnus*).

#### **4.5.1.3 Pipe and Contractor Ware Yards**

Algonquin has identified three proposed pipe and contractor ware yards for potential use during the construction of the AIM Project. The location of these yards, and their existing conditions, are provided in table 2.2.3-1. All three yards are existing construction or industrial sites with no vegetative communities or other natural resources present.

#### **4.5.1.4 Access Roads**

To the extent feasible, existing public and private road crossings along the proposed Project pipeline segments would be used as the primary means of accessing rights-of-way. Algonquin would also use existing public roads near proposed compressor stations and M&R stations. In addition to the existing access available by the use of public roads, Algonquin has identified 28 existing TARs, and 8 PARs along the pipeline route, including one new PAR to be constructed at the Assonet M&R Station. A comprehensive list of the proposed TARs and PARs can be found in table 2.2.4-1.

#### **4.5.2 Vegetation Communities of Special Concern or Value**

This section summarizes unique, sensitive, and protected vegetation that could be affected by the AIM Project facilities in each state. Federal and state resource agencies have been consulted to determine if any federally or state-listed threatened and endangered plant species (including federal and state species of special concern) or their designated communities occur within the Project area, which is discussed further in section 4.7. Agencies contacted include the FWS (New York and New England Field Offices), NYNHP, CTDEEP, MDFW, and RIDEM.

The federally and state-endangered small whorled pogonia (*Isotria medeolodes*) has historically been recorded in Rockland County, New York. An evaluation of potential impacts on this species is provided in section 4.7).

Chestnut oak forests are considered a significant natural community in New York. They are globally listed as G5 (demonstrably secure globally) and in New York listed as S4 (apparently secure) (NYNHP, 2013e). There are several hundred occurrences in New York State. In the Project area, the NYNHP has identified chestnut oak forests within Harriman State Park and the surrounding environs as high quality.

Chestnut oak forests comprise the upland forest type west of the Hudson River, including land crossed by the Haverstraw to Stony Point and Stony Point to Yorktown Take-up and Relay segments and the existing Stony Point Compressor Station. Threats to chestnut oak forests within this region generally include changes in land use (e.g., clearing for development), forest fragmentation (e.g., roads), and invasive species (e.g., insects, diseases, and plants). Other threats may include over-browsing by deer, fire suppression, and air pollution (e.g., ozone and acidic deposition).

Algonquin would limit the amount of disturbance to chestnut oak forests by utilizing the existing pipeline right-of-way during construction to the extent possible. However, some clearing of chestnut oak forest for the temporary construction work areas would be required to safely install the new 42-inch-diameter pipeline in Rockland County, New York. In addition, construction at the Stony Point Compressor Station would require tree clearing for temporary construction work areas, and about 7.6 acres of woodland would be temporarily affected by installation of the new facilities at the station.

The CTDEEP identified extant records for eight rare plant species in the vicinity of the AIM Project pipeline segments in Connecticut and Algonquin's existing Cromwell Compressor Station. These species include climbing fern (*Lygodium palmatum*), Collins' sedge (*Carex collinsii*), field paspalum (*Paspalum laeve*), hard-stemmed bulrush (*Scoenoplectus acutus*), three-leaved false Solomon's seal (*Maianthemum trifolium*), threadfoot (*Podostemum ceratophyllum*), twinflower (*Linnaea borealis* spp. *americana*), and the yellow fringed orchid (*Platanthera ciliaris*) (CTDEEP, 2013d). These species are discussed in detail in section 4.7.

No unique, protected, or sensitive vegetation has been identified at the Burrillville Compressor Station site in Rhode Island or along the proposed Project facilities in Massachusetts.

#### **4.5.3 Noxious Weeds and Other Invasive Plant Species**

This section summarizes the noxious and invasive vegetation identified during field observations that would be crossed by the AIM Project in each state. Invasive species are species that display rapid growth and spread, becoming established over large areas (USDA, 2013a). Invasive plant species can change or degrade natural vegetation communities, which can reduce the quality of habitat for wildlife and native plant species.

The proposed pipeline facilities extend across four states that are represented by a variety of habitat including forests, open fields, wetlands, agriculture, residential development, and industrial development). Much of this area has been disturbed by past land use practices, such as agriculture and residential development. As observed during field surveys, there are many non-native species of vegetation found throughout the Project area. Non-native species commonly observed include non-native honeysuckles (*Lonicera* spp.), Japanese barberry (*Berberis thunbergii*), Japanese knotweed (*Polygonum cuspidatum*), Japanese stiltgrass (*Microstegium vimineum*), autumn olive, buckthorns (*Frangula* or *Rhamnus* spp.), European common reed grass (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), purple loosestrife (*Lythrum salicaria*), and garlic mustard. Invasive plant species commonly observed during the Project field surveys for each state are detailed below.

Algonquin would conduct post-construction maintenance and monitoring of the right-of-way in affected wetlands to assess the success of restoration and revegetation in accordance with its E&SCP and final Wetland Mitigation Plan. Monitoring efforts would include documenting occurrences of exotic invasive species to compare to preconstruction conditions. During the 2013 wetland field surveys, Algonquin documented the presence of any invasives that comprised a significant percent of the vegetative cover. Algonquin would use this information in conjunction with its Invasive Plant Species Control Plan and Wetland Mitigation Plan to address the spread of invasive plants within the Project rights-of-way and control invasive populations that might prevent successful mitigation of impacts on wetlands.

The CTDEEP has indicated that they would incorporate a special permit condition for invasive species management into the section 401 WQC for the Project (CTDEEP, 2013n). The NYSDEC has also provided comments and recommendations for controlling invasive species in wetlands (NYSDEC, 2013m). Algonquin would continue to consult with the CTDEEP and the NYSDEC as part of the 401 WQC permit process.

New York State has an Invasive Species Council that was created to coordinate among multiple state entities and partners in addressing the environmental and economic threats of invasive species. New York State defines invasive species as "a species that is: (a) non-native to the ecosystem under consideration; and (b) whose introduction causes or is likely to cause economic or environmental harm or harm to human health" (NYSDEC, 2013k).

New York has designated 71 plants as invasive species (NYSDEC, 2013j). Listed invasive plants commonly observed during the AIM Project field surveys in New York include: multiflora rose, Norway maple (*Acer platanoides*), Japanese barberry, autumn olive, Japanese honeysuckle (*Lonicera japonica*), oriental bittersweet (*Celastrus orbiculatus*), mugwort (*Artemisia vulgaris*), Japanese knotweed, garlic mustard, reed canarygrass, European common reed grass, and purple loosestrife.

Connecticut has designated 102 plants as invasive species (USDA, 2013b). CTDEEP defines invasives as, “Non-native species are those that are alien to the ecosystem that they have been introduced into and whose introduction causes or is likely to cause harm to the environment or human health. Some non-native species exhibit an aggressive growth habit and can out-compete and displace native species” (CTDEEP, 2013q). Listed invasive plants commonly observed during the AIM Project survey efforts in Connecticut include: multiflora rose, Japanese barberry, autumn olive, oriental bittersweet, mugwort, Japanese knotweed, garlic mustard, reed canarygrass, European common reed grass, purple loosestrife, Japanese stiltgrass, Canada thistle (*Cirsium arvense*), and glossy buckthorn. CTDEEP has developed a set of BMPs to reduce the spread of invasive species within the state (CTDEEP, 2013q).

The Rhode Island Invasive Species Council is an outreach program of the Rhode Island Natural History Survey, the Rhode Island Agricultural Experiment Station, and the University of Rhode Island Cooperative Extension. According to the Executive Order on Invasive Species, “invasive species means an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Rhode Island recognizes 69 invasive plant species (Rhode Island Invasive Species Council, 2013). Of those 69 species, none were observed during the field efforts at the Burrillville Compressor Station.

The Massachusetts Invasive Plant Advisory Group (MIPAG) is a voluntary collaborative, representing organizations and professionals concerned with the conservation of the Massachusetts landscape. MIPAG defines invasive plants as “non-native species that have spread into native or minimally managed plant systems in Massachusetts, causing economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems.” MIPAG recognizes 66 plant species as Invasive, Likely Invasive, or Potentially Invasive (MIPAG, 2013). Listed plants commonly observed during the AIM Project survey efforts include: multiflora rose, autumn olive, oriental bittersweet, mugwort, Japanese knotweed, garlic mustard, reed canarygrass, European common reed grass, purple loosestrife, Japanese stiltgrass, Canada thistle, tree of heaven (*Ailanthus altissima*), tartarian honeysuckle (*Lonicera tartarica*), black locust, common buckthorn (*Rhamnus cathartica*), and Japanese wineberry (*Rubus phoenicolasius*).

#### **4.5.4 General Impacts and Mitigation**

Table 4.5.4-1 lists the amount of forested and open land vegetation cover types that would be affected by construction and operation of the proposed Project. In total, construction of the proposed Project facilities would temporarily disturb about 352.4 acres of vegetation and permanently affect 34.7 acres. The proposed Project would temporarily affect about 160.9 acres of open land, including 125.4 acres of open upland and 35.5 acres of open wetland vegetation. These impacts would be short term. The proposed Project would temporarily affect about 191.5 acres of forested vegetation, including 174.5 acres of forested upland and 17.0 acres of forested wetland vegetation. Impacts on forested areas would be longer term. The AIM Project would permanently affect about 7.7 acres of open land, of which 6.0 acres are open upland and 1.7 acres are open wetlands, and 27.0 acres of forested vegetation, of which 24.6 acres are forested upland and 2.4 acres are forested wetland. See section 4.8 for additional information on land use impacts. Additional wetland impact information is provided in section 4.4.

TABLE 4.5.4-1															
Acres of Vegetation Potentially Affected by the AIM Project															
Facility Type/Facility	State	Open Land						Forested						Total	
		Upland		Wetland		Total		Upland		Wetland		Total			
		Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
PIPELINE FACILITIES															
Replacement Pipeline															
Haverstraw to Stony Point Take-up and Relay	NY	13.7	0	4.1	0	17.8	0	14.3	0	1.0	0	15.3	0	33.1	0
Stony Point to Yorktown Take-up and Relay	NY	44.2	0.2	12.7	0.2	56.9	0.4	66.6	10.1	6.1	0.8	72.7	10.9	129.6	11.3
Southeast to MLV 19 Take-up and Relay	NY	0.9	0	0	0	0.9	0	0.4	0	0	0	0.4	0	1.3	0
	CT	15.4	0	5.7	0	21.1	0	15.1	0	2.5	0	17.6	0	38.7	0
E-1 System Lateral Take-up and Relay	CT	35.1	3.3	10.4	1.1	45.5	4.4	28.9	2.3	5.2	0.6	34.1	2.9	79.6	7.3
Loop Extension															
Line-36A Loop Extension	CT	2.8	0.3	2.0	0.3	4.8	0.6	7.3	2.8	1.1	0.6	8.4	3.4	13.2	4.0
E-1 System Lateral Loop Extension	CT	2.8	0.3	0.6	0.1	3.4	0.4	8.4	2.2	1.1	0.4	9.5	2.6	12.9	3.0
New Pipeline															
West Roxbury Lateral	MA	4.7	0.9	0	0	4.7	0.9	3.7	0.6	0	0	3.7	0.6	8.4	1.5
PIPELINE FACILITIES TOTAL		119.7	5.0	35.5	1.7	155.2	6.7	144.7	18.0	17.0	2.4	161.7	20.4	316.9	27.1
ABOVEGROUND FACILITIES															
Existing Compressor Station Modifications															
Stony Point Compressor Station	NY	1.0	0	0	0	1.0	0	7.6	0.9	0	0	7.6	0.9	8.6	0.9
Southeast Compressor Station	NY	0.2	0	0	0	0.2	0	5.1	0	0	0	5.1	0	5.3	0
Oxford Compressor Station	CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cromwell Compressor Station	CT	0.2	0	0	0	0.2	0	3.2	1.7	0	0	3.2	1.7	3.4	1.7
Chaplin Compressor Station	CT	1.6	0	0	0	1.6	0	3.0	0	0	0	3.0	0	4.6	0
Burrillville Compressor Station	RI	0.2	0	0	0	0.2	0	5.9	0	0	0	5.9	0	6.1	0
Existing Compressor Station Modifications Total		3.2	0	0	0	3.2	0	24.8	2.6	0	0	24.8	2.6	28.0	2.6

TABLE 4.5.4-1 (cont'd)															
Acres of Vegetation Potentially Affected by the AIM Project															
Facility Type/Facility	State	Open Land						Forested						Total	
		Upland		Wetland		Total		Upland		Wetland		Total			
		Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Existing Metering and Regulating (M&R) Station Modifications															
Stony Point M&R Station <sup>a</sup>	NY	0.6	0	0	0	0.6	0	0.8	0	0	0	0.8	0	1.4	0
Peekskill M&R Station <sup>a</sup>	NY	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cortlandt M&R Station <sup>a</sup>	NY	1.2	0	0	0	1.2	0	1.4	0	0	0	1.4	0	2.6	0
West Danbury M&R Station <sup>b</sup>	CT	1.2	0	0	0	1.2	0	1.3 <sup>b</sup>	0	0	0	1.3 <sup>b</sup>	0	2.5 <sup>b</sup>	0
Southbury M&R Station	CT	0.1	0	0	0	0.1	0	0.3	0	0	0	0.3	0	0.4	0
Waterbury M&R Station	CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Haven M&R Station	CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guilford M&R Station	CT	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0.1	0
Farmington M&R Station	CT	0	0	0	0	0	0	0.1	0	0	0	0.1	0	0.1	0
Glastonbury M&R Station	CT	0	0	0	0	0	0	0.4	0	0	0	0.4	0	0.4	0
Middletown M&R Station	CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salem Pike M&R Station	CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Montville M&R Station <sup>a</sup>	CT	0	0	0	0	0	0	0.6	0	0	0	0.6	0	0.6	0
Willimantic M&R Station	CT	0	0	0	0	0	0	0.7	0.5	0	0	0.7	0.5	0.7	0.5
Pomfret M&R Station	CT	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0	0
Putnam M&R Station	CT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North Fall River M&R Station <sup>c</sup>	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Bedford M&R Station	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Middleborough M&R Station	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brockton M&R Station	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Norwood M&R Station	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Needham M&R Station	MA	0.1	0	0	0	0.1	0	0	0	0	0	0	0	0.1	0
Wellesley M&R Station	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mystic M&R Station	MA	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing M&R Station Modifications Total <sup>d</sup>		0.3	0	0	0	0.3	0	1.7	0.5	0	0	2.3	0.5	2.6	0.5

TABLE 4.5.4-1 (cont'd)

## Acres of Vegetation Potentially Affected by the AIM Project

Facility Type/Facility	State	Open Land						Forested						Total	
		Upland		Wetland		Total		Upland		Wetland		Total			
		Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
New M&R Stations															
Oakland Heights M&R Station	CT	0.8	0	0	0	0.8	0	1.6	1.4	0	0	1.6	1.4	2.4	1.4
Assonet M&R Station	MA	0.3	0.1	0	0	0.3	0.1	0.7	0.1	0	0	0.7	0.1	0.9	0.2
West Roxbury M&R Station <sup>d</sup>	MA	0	0	0	0	0	0	1.0	1.0	0	0	1.0	1.0	1.0	1.0
New M&R Stations Total		1.1	0.1	0	0	1.1	0.1	2.3	2.5	0	0	3.4	2.5	4.5	2.6
Existing M&R Station Removal															
Greenville M&R Station	CT	0.2	0	0	0	0.2	0	0	0	0	0	0	0	0.2	0
ABOVEGROUND FACILITIES TOTAL <sup>d</sup>		4.8	0.1	0	0	4.8	0.1	28.8	5.6	0	0	28.8	5.6	33.6	5.7
ACCESS ROADS															
	NY	0.5	0.5	0	0	0.5	0.5	0.2	0.2	0	0	0.2	0.2	0.7	0.7
	CT	0.4	0.4	0	0	0.4	0.4	0.7	0.7	0	0	0.7	0.7	1.1	1.1
	RI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MA	0	0	0	0	0	0	0.1	0.1	0	0	0.1	0.1	0.1	0.1
ACCESS ROAD TOTALS		0.9	0.9	0	0	0.9	0.9	1.0	1.0	0	0	1.0	1.0	1.9	1.9
PROJECT TOTAL <sup>c</sup>		125.4	6.0	35.5	1.7	160.9	7.7	174.5	24.6	17.0	2.4	191.5	27.0	352.4	34.7

<sup>a</sup> The temporary workspace for these M&R Stations is already included in the vegetation impact acreages for the pipeline segments. These numbers are not included in the subtotals and totals for aboveground facilities.

<sup>b</sup> A portion of the temporary workspace at the West Danbury M&R Station would fall within the overall temporary workspace area for pipeline facilities; only the portion outside the overall pipeline workspace (0.1 acre of forested upland) is included in subtotal and total calculations.

<sup>c</sup> The construction workspace of the North Fall River M&R station is already included in the Assonet M&R temporary/permanent workspace areas.

<sup>d</sup> Vegetation impacts in the subtotal and totals rows do not include the aboveground facilities that are marked with an "a." The construction workspaces from those facilities are already included in the pipeline facilities.

#### 4.5.4.1 Pipeline Facilities

The primary impact on vegetation would be the temporary and permanent alteration of vegetative cover along the pipeline construction rights-of-way. The pipeline right-of-way and ATWSs would be cleared of vegetation prior to construction to provide a safe working area. The limits of clearing would be identified and flagged in the field prior to the start of clearing operations and Algonquin would install erosion control measures following initial disturbance of the soil as described in its E&SCP. The cleared width within the right-of-way and ATWSs would be kept to the minimum required to safely construct the pipeline. Impacts on forest habitat could include fragmentation, edge effects, and increased opportunity for invasive species establishment. Construction in forest lands would remove mature trees in the construction right-of-way. In addition, the canopy overhanging the right-of-way may be trimmed as needed. Felled trees would be cut into lengths, chipped on the right-of-way, or removed to an approved site. In temporary construction work areas, tree stumps and rootstock would be left in place, wherever possible, to facilitate natural revegetation.

The removal of mature trees and other vegetation could also result in secondary impacts such as increased erosion. Incremental fragmentation of forest habitat could occur due to the expansion of Algonquin's existing right-of-way. The loss of forest habitat and the expansion of existing corridors could also decrease the quality of habitat for forest wildlife species, including alteration of habitat resulting from increased light levels and a subsequent loss of soil moisture as a result of an expanded right-of-way. Expansion of the existing corridor could also result in an increased opportunity for invasive plants to displace native species. However, the Project would not contribute significantly to forest fragmentation. Forest fragmentation generally occurs when a new corridor or clearing is cut through a forested area. Much of the proposed pipeline routes are located along existing rights-of-way and in areas that are already developed and highly fragmented. As a result, the forested areas that are present are predominantly edge habitats.

In total, construction of the proposed pipeline facilities, which includes the ATWSs required for construction, would disturb about 316.9 acres of vegetation. The proposed Project would have a temporary, short-term effect on about 155.2 acres of open land, including 119.7 acres of open upland and 35.5 acres of open wetland vegetation. The proposed Project would affect about 161.7 acres of forest vegetation, including 144.7 acres of forested upland and 17.0 acres of forested wetland vegetation. Impacts on these areas would be long term. Permanent vegetation impacts from the pipeline facilities would include about 6.7 acres of open land, of which 5.0 acres are open upland and 1.7 acres are open wetlands, and 20.4 acres of forest vegetation, of which 18.0 acres are forested upland and 2.4 acres are forested wetland (see table 4.5.4-1).

Following construction, all disturbed areas would be restored. The ATWSs used during construction (other than areas already existing as gravel or pavement) would be seeded and allowed to revegetate to preconstruction cover types, with no further maintenance or disturbance associated with operation of the pipeline. Clearing for construction of the pipeline would not result in any permanent impacts on wetland vegetation communities located outside of the permanent right-of-way and other maintenance areas, which would be allowed to revegetate naturally following construction. Long-term impacts on forested communities would occur because of the time required for woody vegetation to revert to preconstruction conditions. Herbaceous vegetation would be short term, recovering within one to two growing seasons. In accordance with the E&SCP, Algonquin would monitor to determine the post-construction revegetative success.

In addition, Algonquin would implement its Invasive Plant Species Control Plan to address the spread of invasive plants within the Project rights-of-way and control invasive populations that might prevent successful revegetation. Algonquin is also working with the USACE and CTDEEP on an



approach to managing invasive species in Connecticut. This management would include preconstruction mowing, construction phase mitigation measures, post-construction monitoring, and post-construction management. Construction phase mitigation measures identified to-date are summarized below.

- Using baseline data, areas where invasive species are dominant would be noted and avoided to the extent practicable.
- The EI would make every effort to ensure that construction mats and equipment are clean and free of excess dirt and mud prior to entering a wetland area.
- As needed, equipment wash stations would be designated to ensure that equipment is clean.
- Sediment and erosion control devices would be installed across the right-of-way on slopes leading into wetlands and along the edge of the construction right-of-way to prevent seed dispersion and spoil from migrating into wetland areas.
- Crews would be trained in identifying priority invasive species of concern and using precautions to prevent their spread.
- Construction and revegetation would be expedited in wetlands.

A final management plan would be filed with the USACE and CTDEEP through the permitting process.

During operation, routine maintenance of the right-of-way would occur to allow continued access for routine pipeline patrols, maintaining access in the event of emergency repairs, and visibility during aerial patrols. In upland areas, maintenance of the right-of-way would involve clearing the entire permanent right-of-way of woody vegetation. As such, the maintained permanent rights-of-way would be subjected to mowing every 3 years. To facilitate periodic corrosion surveys, a 10-foot-wide strip centered on the pipeline would be mowed annually to maintain herbaceous growth. Algonquin would not apply herbicides for general right-of-way maintenance.

These maintenance activities would result in permanent conversion of some areas of existing upland forested vegetation to herbaceous or scrub-shrub vegetation. However, because Algonquin has routed the pipeline facilities to use existing utility rights-of-way and road corridors to the extent possible, impacts on forested vegetation would be minimized.

In summary, Algonquin would implement the measures in its E&SCP and Invasive Plant Species Control Plan to minimize impacts on vegetation within the construction and permanent rights-of-way and improve revegetation success. In general, impacts on non-forested vegetation generally would be temporary or short term and would not be significant. Construction of the proposed pipeline facilities would have a long-term effect on forested wetland and upland vegetation within the construction right-of-way and a permanent affect within the maintained operational right-of-way. We find that Project-specific minimization and mitigation measures, and mitigation measures described in Algonquin's E&SCP and Invasive Plant Species Control Plan would be sufficient to offset adverse impacts on vegetation in the Project area. Therefore, we conclude that constructing and operating the pipeline facilities would not significantly affect existing vegetation populations.

#### 4.5.4.2 Aboveground Facilities

In total, construction of the proposed new M&R stations, modifications to existing compressor and M&R stations, and removal of the Greenville M&R Station would disturb about 33.6 acres of vegetation, including about 4.8 acres of open upland and 28.8 acres of forest upland vegetation. Construction and operation of aboveground facilities would not affect wetland vegetation. Temporary impacts on vegetation and revegetation plans within the construction workspace areas for the aboveground facilities would be similar to those described above for the pipeline facilities. Many of the ATWSs to be used during construction would be utilized for both pipeline and aboveground facilities. Areas that were included in the vegetation impacts for the pipeline facilities are not included in this section (see table 4.5.4-1).

Permanent vegetation impacts from the aboveground facilities would include about 0.1 acre of open upland and 5.6 acres of forest upland vegetation.

Existing compressor stations that would have temporary impacts on vegetation include the Stony Point, Southeast, Cromwell, Chaplin, and Burrillville Compressor Stations. There would also be some permanent vegetation impacts associated with operation of the existing Stony Point and Cromwell Compressor Stations. Work at these compressor stations would permanently convert about 2.6 acres of forested upland vegetation to open upland vegetation. The effects on vegetation from each of the existing compressor stations are provided in table 4.5.4-1.

The effects on vegetation due to the modification of the existing M&R stations are provided in table 4.5.4-1. All of the temporary effects on vegetation from the Stony Point, Peekskill, Cortlandt, West Danbury, and Montville M&R Stations are associated with construction of the pipeline segments. Additionally, the temporary effects on vegetation from the North River M&R Station are included in the acreage of disturbance for the new Assonet M&R Station. Of the existing M&R stations, only the Willimantic M&R Station would permanently affect vegetation, converting about 0.5 acre of forested upland vegetation to open upland vegetation.

Each of the proposed new M&R stations would have temporary and permanent impacts on vegetation. The effects on vegetation from each of the new M&R stations are provided in table 4.5.4-1. In total, between these three facilities, about 4.5 acres (3.4 acres of forested upland and 1.1 acres of open uplands) would be temporarily affected by the new facilities. These facilities would permanently convert about 2.5 acres of forested upland vegetation to open upland vegetation.

The removal of the Greenville M&R Station would temporarily affect 0.2 acre of open uplands. There are no temporary impacts on forested upland or any permanent impacts on vegetation associated with the Greenville M&R Station.

In summary, construction of the proposed aboveground facilities and modifications to existing stations would result in the long term and permanent impacts on forested vegetation. However, Project-specific minimization and mitigation measures and mitigation measures described in Algonquin's E&SCP are determined to be sufficient to offset adverse impacts on vegetation in the Project area. Therefore, construction and operation of the aboveground facilities would not significantly affect existing vegetation populations.

#### **4.5.4.3 Pipe and Contractor Ware Yards**

Algonquin would use three pipe and contractor ware yards, two in Connecticut and one in New York, during construction of the AIM Project facilities. All three of these yards consist of existing construction or industrial sites that would not require any modification or upgrade work that would affect vegetation.

#### **4.5.4.4 Access Roads**

Algonquin would use existing access roads during construction to the maximum extent practicable, minimizing major impacts on vegetation communities. The majority of the roads identified by Algonquin have existing gravel, asphalt, or concrete surfaces that can be used with little or no preconstruction improvements. In a few locations, upgrades would be required, such as brush removal and tree trimming, to allow safe access along the existing access roads. However, we have determined that no significant effects on vegetation would occur during the use of existing access roads required for the pipeline facilities.

Six of the TARs and one of the PARs are unimproved dirt or gravel roads that would require minor (e.g., about 10-foot) upgrades prior to pipeline construction. These upgrades would result in about 1.9 acres of temporary and permanent vegetation disturbance during Project construction and operation. In addition, Algonquin would also need to construct a new 120-foot-long by 12-foot-wide paved PAR from the existing North Fall River M&R Station site to the new Assonet M&R Station, which would affect about 0.1 acre of forested upland. The vegetative community present is a mixed oak forest, with red oak dominant, and areas of early successional growth. Total vegetative impacts for these access roads in each state are provided in table 4.5.4-1.

Based on the characteristics of the identified vegetation communities in the vicinity of the access roads, the implementation of Project-specific minimization and mitigation measures, and the mitigation measures described in Algonquin's E&SCP, we conclude that the use and improvement of existing access roads and construction of a new access road would not result in significant impacts on existing vegetation in the Project area.

### **4.6 WILDLIFE AND AQUATIC RESOURCES**

#### **4.6.1 Wildlife**

##### **4.6.1.1 Existing Wildlife Resources**

The AIM Project would traverse terrestrial and wetland habitats that support a diversity of wildlife species. For the purposes of this EIS, the wildlife habitats along the pipeline segments and at the aboveground facility sites are described regionally and are representative of the vegetation community structure and composition of the terrestrial and wetland habitats present within the Project area. The dominant wildlife habitat types that have been identified along the proposed pipeline route and at the aboveground facility sites include: upland forest, open uplands (early successional scrub-shrub and herbaceous vegetation cover), forested wetlands, open wetlands (both palustrine/freshwater and estuarine wetlands), urban, and open water estuarine habitats. Table N-1 in appendix N lists the common wildlife species often associated with the vegetative cover types found within the Project area. Wetland habitat types are further described in section 4.4. Special status species, such as federally and state-listed threatened or endangered species, are discussed in section 4.7.

## **Upland Forest**

Upland forest is present along portions of the pipeline segments and adjacent to many of the aboveground facilities. It generally consists of either mixed oak forest or successional forests dominated by species such as sweetgum, paper birch, and/or tree-of-heaven. Hardwood forests provide year-round food resources, cover, and nesting habitat for a variety of wildlife species, including large and small mammals, reptiles and amphibians, insects, and both migratory and non-migratory birds.

## **Open Uplands**

This cover type includes successional scrub-shrub areas, fields, and disturbed and/or maintained areas, such as existing utility rights-of-way or other open space areas. Early successional and grassland habitats provide valuable nesting and foraging habitats for grassland bird species. Species such as the Eastern cottontail prefer shrubby, overgrown open habitats and other early successional, while grassy areas offer habitat for ground-nesting birds. Forests adjacent to open space areas create edge habitats that are used by numerous mammals, reptiles, and bird species.

## **Wetlands**

Wetland vegetation community types along Project facilities include palustrine forested wetlands, palustrine scrub-shrub wetlands, and palustrine emergent wetlands. The forested wetlands crossed by the Project facilities are largely dominated by red maple and provide important food, shelter, migratory and overwintering areas for multiple songbird species, waterfowl, small mammals, and amphibians (see section 4.4.1).

Open wetlands are found throughout the Project area and include freshwater scrub-shrub and emergent wetland areas, along with estuarine tidal rivers and creeks. Scrub-shrub wetland habitats contain vegetation that is characteristically low and compact. The plant species in a scrub-shrub wetland offer excellent nesting sites for many bird species. These wetland habitats are also used by reptiles and amphibians.

Freshwater emergent wetlands include wet meadows and emergent marshes characterized by a variety of grasses, sedges, and rushes. Many of the freshwater emergent wetlands in the Project area are dominated by invasive species, such as common reed that provide relatively low quality wildlife habitat. However, many common species of birds, small and large mammals, reptiles, and amphibians are associated with emergent wetlands.

## **Urban Environment**

Urban environments are characterized by a low diversity of wildlife species that are tolerant of human development and activity. Common bird species in cities and residential areas include European starlings, house sparrows, rock pigeons, mourning doves, and Northern mockingbirds. Mammals that have become adapted to living in human environments, such as the Norway rat, are also common.

## **Open Water**

The Project would cross under the Hudson River Estuary, a 153-mile-long tidal system that stretches from the Troy Dam to New York Harbor (NYSDEC, 2014a). Open water estuarine habitats support a diverse array of coastal wildlife, providing foraging areas for coastal breeding and migratory birds, and supporting both breeding and wintering waterfowl populations. Mudflats exposed by tidal

waters in the estuary can support a variety of migratory shorebirds. Marine mammals, such as the harbor seal and gray seal, have been reported in the lower Hudson River Estuary (FWS, 1997).

#### **4.6.1.2 Significant or Sensitive Wildlife Habitats**

This section identifies and describes the significant or sensitive wildlife habitats within the AIM Project area, such as vernal pools, sensitive coastal habitats, and other known wildlife resources not specific to threatened and endangered species.

##### **Vernal Pools**

As described in section 4.4.1.2, vernal pools are intermittently to ephemerally ponded, small, shallow depressions usually located within an upland forest (NYNHP, 2013a). These pools typically flood in spring or after a heavy rainfall, are dry throughout the summer, and then fill again in autumn. The substrate consists of dense leaf litter over hydric soils. Vernal pools typically occupy a confined basin (i.e., a standing waterbody without a flowing outlet), but may have an intermittent stream flowing out of it during high water (NYNHP, 2013a). Vernal pools provide breeding habitat for many species of amphibians, reptiles, crustaceans, mollusks, annelids, and insects. Rare species, such as the Jefferson's salamander, are known to use vernal pools near the Project area (see section 4.7).

As discussed in section 4.4.3.2, Algonquin identified 11 vernal pools within the Project study corridor in 2013 and 2014. Two vernal pools are located in the proposed temporary workspace in the Town of Cortlandt, New York. The other nine vernal pools are located outside of the proposed construction workspace areas for the Project.

##### **Hudson River Significant Coastal Fish and Wildlife Habitat**

The Stony Point to Yorktown Take-up and Relay segment would cross the lower Hudson River Reach, an area designated as Significant Coastal Fish and Wildlife Habitat (SCFWH) by the NYSDEC (NYSDOS, 2013). The lower Hudson River Reach contains the Hudson Highlands, which extend roughly from Denning's Point to Stony Point, New York. This SCFWH encompasses 6,700 acres of the main river channel below mean low water and adjacent shallows and shoals, over an approximate 20-mile reach (NYSDOS, 2013). This area contributes directly to the production of in-river and ocean populations of food, game, and forage fish species.

The Hudson Highlands supports the deepest (up to 200 feet deep) and narrowest segment of the Hudson River. The deepwater areas of the Hudson Highlands area are also used by concentrations of species that spawn elsewhere in the Hudson River Estuary. These deep areas are also used as migration routes by the federally endangered Atlantic and shortnose sturgeon, and are important nursery and summering areas for juvenile Atlantic sturgeon and summering areas for post-spawn adults (NYSDOS, 2013). A discussion of fisheries and aquatic resources is presented in section 4.6.2, and special status species, such as Atlantic and shortnose sturgeon, are discussed further in section 4.7.

The Lower Hudson River Estuary is also a significant habitat and habitat complex as defined by the FWS (FWS, 1997). The Lower Hudson River Estuary, Complex #21 of the New York Bight Watershed, is the portion of the Hudson River extending from the Battery at the southern tip of Manhattan to Stony Point at the northern end of Haverstraw Bay (FWS, 1997). This productive estuary is a regionally significant nursery and wintering area for anadromous, estuarine, and marine fish species, as well as a migratory and feeding area for birds and fish (FWS, 2014k). The proposed pipeline would cross the lower Hudson River Reach using the HDD method to minimize effects on this significant habitat

complex, and the riparian and estuarine areas of the Lower Hudson River Important Bird Area (IBA) (see section 4.7.2 for further discussion of IBAs).

Associated with the fisheries resources in Hudson Highlands are significant concentrations of wintering bald eagles. Winter residence in the area generally extends from December through March throughout the Hudson Highlands and on Iona Island. Iona Island has been designated as an eagle sanctuary by the Palisades Interstate Park Commission (PIPC) (NYSDOS, 2013). See section 4.7.3 for further discussion on bald eagles.

#### **4.6.1.3 Wildlife Management Areas or Refuges**

In New York, the proposed Project pipeline segments would cross designated wildlife management areas, including Harriman State Park in Rockland County and the Blue Mountain Reservation in Westchester County, as discussed below. AIM Project facilities in Connecticut, Rhode Island, and Massachusetts would not affect any wildlife management areas or refuges.

##### **Harriman State Park**

The Haverstraw to Stony Point Take-up and Relay segment would cross Harriman State Park in two locations within existing rights-of-way between MPs 0.0 to 0.3 in the Town of Haverstraw and between MPs 2.5 to 2.6 in the Town of Stony Point. Harriman State Park is the second largest park in the New York State Parks system, located in Rockland and Orange Counties. The 46,613-acre park holds 31 lakes and ponds, has over 200 miles of trails, and provides a number of recreation areas for camping, swimming, and hiking (New York State Office of Parks, Recreation and Historic Preservation [NYSOPRHP], 2013). Harriman State Park supports 18.8 miles of the Appalachian Trail, portions of the Harriman and Sterling Forests IBA (see section 4.7.2), and the Iona Island Bird Conservation Area (BCA). The Iona BCA is an important tidal wetland for migratory waterfowl. Iona Island is located 2 miles north of the nearest proposed AIM Project facility and would not be disturbed by Project construction (NYSOPRHP, 2013).

##### **Blue Mountain Reservation**

In New York, the Stony Point to Yorktown Take-up and Relay pipeline segment would pass through Blue Mountain Reservation in Westchester County between MPs 6.7 and 8.1 and again between MPs 8.4 and 8.5. Blue Mountain Reservation is a 1,538-acre county-owned park in the northwest section of Westchester County that features miles of trails for mountain biking, walking, nature study, and challenging hikes to the tops of two large peaks, Mt. Spitzenberg and Blue Mountain.

The reservation is also classified as a biodiversity hub in the Croton-to-Highlands Biodiversity Plan, because it provides an area of high-quality wildlife habitat in a densely developed area for many wildlife species, including amphibians and reptiles, such as spotted salamanders, gray tree frogs, wood frogs, garter snakes, milk snakes, and the black rat snake (Miller and Klemens, 2004). The mixed hardwood forest also provides habitat for many forest-dwelling bird species including owls, woodpeckers, thrushes, and wood warblers.

#### **4.6.1.4 General Impacts and Mitigation**

The construction of the AIM Project facilities would affect about 191.5 acres of forested land and 160.9 acres of open land (see section 4.5.1). Construction of the pipeline segments account for 161.7 acres (84 percent) of estimated effects on forested land and 155.2 acres (96 percent) of effects on open land. Aboveground facilities account for about 28.8 acres (14 percent) of estimated effects on forested

land and 4.8 acres (3 percent) of effects on open land. The construction of access roads would affect about 1.0 acres of forested land and 0.9 acre of open land.

### **Pipeline Facilities**

The majority of the pipeline routes are located within or adjacent to existing Algonquin rights-of-way, roadways, railways, and/or utility rights-of-way. These existing rights-of-way are routinely maintained as part of regular facility operations to control vegetative growth, which prevents many areas from reverting back to forested land. Many species of resident and migratory wildlife in the Project area use these existing utility corridors as preferred habitat.

Following construction, temporarily disturbed areas would be seeded and left to revegetate via natural succession. About 24.6 acres of forested upland habitat and 2.4 acres of forested wetland would be permanently converted and maintained in an early successional stage by mowing and periodic tree removal during operation.

Wildlife could be affected by clearing of vegetation; alteration of the landscape from scraping the ground, soil disturbance, and recontouring; deposition of trash and debris; the use of chemicals or exposure to contaminated soil or groundwater; conflicts with vehicles; human presence; activities associated with trenching; increased predation; and edge effects and habitat fragmentation. During construction, more-mobile species would be temporarily displaced from the construction right-of-way and surrounding areas to similar habitats nearby. Some wildlife displaced from the right-of-way would return to the newly disturbed area and adjacent, undisturbed habitats after completion of construction. Less-mobile species, such as small mammals, reptiles, amphibians, and nesting birds, may experience direct mortality or permanent displacement. Displacement of species could lead to increased competition for some resources.

The clearing of vegetation on the construction right-of-way and ATWS areas would reduce cover, foraging, breeding, and nesting habitat for some wildlife. The degree of effects would depend on the type of habitat affected, the timing of clearing and construction activities, and the rate at which the area recovers after disturbance from construction. The effect on species that rely on open land habitats would be short term, because these areas would be reseeded after construction and likely recover within 1 to 3 years.

Habitat areas comprising tree- and shrub-dominated vegetation and their associated wildlife may be affected on a longer-term basis. Clearing these workspace areas would affect forest-dwelling wildlife species to a greater extent than open habitat wildlife species, because forested ATWS areas would be prevented from reestablishing on the permanent right-of-way. Algonquin has minimized the potential for these long-term effects by collocating and overlapping the proposed ATWS areas with their existing rights-of-way to reduce the amount of forest clearing required for the Project.

The FWS expressed concern for the fragmentation of forest along the Hudson River in relation to migratory birds (Algonquin, 2014b). A discussion of migratory birds is provided in section 4.7.2. Forest fragmentation generally occurs when a new corridor or clearing is cut through a forested area. Much of the proposed pipeline routes are located along existing rights-of-way and in areas that are already developed and highly fragmented. As a result, the forested areas that are present are predominantly edge habitats that are unlikely to support forest interior species. Therefore, the effect on forest-dwelling wildlife would be minimal. Tree clearing for the construction and maintenance of the Stony Point to Yorktown Take-up and Relay segment would fragment small areas of continuous forest. However, the Project would not contribute significantly to forest fragmentation.



The alteration of the landscape through removal of vegetation, scraping of the ground, soil disturbance, and recontouring would reduce seed banks, disturb soil-dwelling species, and could temporarily alter drainage patterns. The degree of effects would depend on the species present during the time of construction. Soil-dwelling invertebrates would be directly affected through movement of soil from one place to another, resulting in some mortality and displacement. This could reduce the forage potential for insectivores that inhabit the area. Other animals would be indirectly affected through the reduction in seed banks, resulting in longer recovery times for vegetation that could provide forage, cover, and nesting habitat. However, the regional influence of these effects would be minor due to the temporary nature of the effects and limited area affected by construction.

Increased predation could occur during construction and operation of the proposed Project facilities due to the removal of vegetation and the temporary increase in line-of-sight that would result. Although this could lead to higher mortality rates for certain animals, the Project is unlikely to have any population-level impact due to these effects.

Trenching activities and the spoil piles generated during construction could create potential traps for wildlife species and barriers to movement for less mobile species. Wildlife could fall into trenches, and spoil piles could create barriers to some less mobile species, such as small reptiles and amphibians. Where the existing AIM Project pipeline crosses major roadways and sensitive areas, such as the Hudson River and Still River, Algonquin would use the HDD method to minimize effects on wildlife due to trenching.

To further minimize the potential for wildlife to become trapped, Algonquin plans to not have extensive lengths of trench open at one time during pipeline installation. Furthermore, Algonquin would conduct preconstruction sweeps and construction inspections along specific sections of right-of-way, and specific surveys for the following designated federally and state-listed species:

- timber rattlesnake in Stony Point, Rockland County, New York;
- eastern hognose snake along the E-1 System Take-up and Relay segment in New London County, Connecticut; and
- eastern box turtles along the Line-36A Loop pipeline in Cromwell and Rocky Hill, Connecticut.

Algonquin would also incorporate additional conservation measures for bog turtles developed through consultation with the FWS at the crossing of specific wetlands. These measures would minimize the potential for this species to become trapped in trenches during construction. See section 4.7.1.2 for further discussion.

Trash and debris could affect wildlife by encouraging certain species to move into areas where humans are working, resulting in potential wildlife-human interaction and conflict and increased predation. To minimize the potential for wildlife attraction, food wastes from the construction area would be maintained in a neat and orderly manner. Solid wastes, such as food wrappings, cigarette butts and packets, Styrofoam cups and plates, and similar wastes would be routinely collected and disposed off-site.

A spill of hazardous materials during construction, such as diesel or oil, or the excavation and exposure of contaminated soil or groundwater could directly affect wildlife through direct ingestion or ingestion of contaminated material. The effects on wildlife from chemicals or contaminants would be minimized by Algonquin's adherence to their SPCC Plan. Thus, the risk of chemical exposure to individual animals would be low, and there would be no risk of population-level effects on any wildlife species.

Project-related traffic on paved and unpaved roads during construction could temporarily disturb birds and other wildlife near roadways, resulting in an increase in direct mortality of certain wildlife from animal/vehicle collisions. Due to the short timeframe of construction for the AIM Project, the effects on animals from increased vehicular traffic would be minor.

In an effort to minimize permanent effects on wildlife and to promote the rapid stabilization and revegetation of the disturbed areas, Algonquin would comply with its E&SCP to minimize disturbance to vegetation and provide for stabilization of affected areas to mitigate direct and indirect effects on wildlife. Revegetation would be completed in accordance with permit requirements and consultation with agency and non-agency stakeholders affected by the Project.

After the right-of-way is revegetated, the Project would not be expected to have a significant effect on wildlife due to planned maintenance of the right-of-way. With the exception of a 10-foot-wide strip that may be mowed annually in upland areas, vegetative maintenance on the right-of-way would occur no more frequently than once every 3 years. In addition, maintenance clearing would not be conducted between April 15 and August 1 to avoid direct and indirect effects on wildlife during the nesting and breeding season (e.g., grassland birds). In wetland areas, trees located within 15 feet of either side of the pipeline that are greater than 15 feet in height may be selectively cut and removed from the right-of-way. However, trees and shrubs that become reestablished beyond 15 feet on either side of the pipeline would not be disturbed. Algonquin would retain a riparian strip within 25 feet of a stream as measured from the mean high water mark. This riparian area would be allowed to permanently revegetate with native woody plant species across the entire right-of-way, with exception of a 10-foot-wide corridor centered on the pipeline that would be maintained in an herbaceous state. In the riparian area, trees and shrubs greater than 15 feet in height may also be selectively cut within 15 feet on either side of the pipeline.

Because Algonquin would largely make use of its existing rights-of-way and would adhere to its SPCC Plan, E&SCP, and other measures discussed in this EIS, we conclude that Algonquin's proposed pipeline facilities would not substantially alter local wildlife populations.

### **Aboveground Facilities**

The majority of the work at aboveground facilities would take place within existing, developed properties and would not result in significant disturbance to or destruction of wildlife or their habitat. Portions of some aboveground facility sites contain forested upland and open upland communities. Construction and operation of new proposed aboveground facilities and changes to existing facilities would primarily affect forested upland communities (28.8 acres); however, in a few locations, open upland communities may be affected (4.8 acres). For the five compressor stations requiring expansion beyond the current developed footprint, Algonquin has designed the proposed modifications to minimize the amount of forest clearing required for construction.

Further, to minimize effects on wildlife and wildlife habitat at aboveground facilities, Algonquin would:

- retain the existing forest buffers at all the compressor station sites;
- expeditiously restore vegetative cover in areas not occupied by permanent structures at the compressor stations and M&R stations by grading, fertilizing, seeding, and mulching these areas immediately following construction; and
- install permanent erosion controls, as needed, to ensure stabilization and minimize effects of long-term erosion and sedimentation.

While construction and operation of the modified and new aboveground facilities would, in some cases, have permanent impacts on vegetation and wildlife habitat, most of the work would occur at existing facilities where similar habitat exists adjacent to these sites. Further, Algonquin would retain much of the existing forest buffers at the compressor station sites. Therefore, we find that impacts on wildlife from construction and operation of the Project aboveground facilities would not be significant.

### **Pipe Yards and Contractor Ware Yards**

Algonquin has identified three proposed pipe and contractor ware yards for potential use during the construction of the AIM Project. All three yards are existing construction or industrial sites with no vegetative communities or other natural resources present. We conclude that the temporary use of these yards would not result in a significant impact on wildlife or wildlife habitat.

### **Access Roads**

To the extent feasible, existing public and private road crossings along the proposed AIM Project pipeline segments would be used as the primary means of accessing the rights-of-way. Algonquin would also use existing public roads near proposed compressor stations and M&R stations. Although Algonquin would be using existing roads for temporary and permanent access, seven of these roads would require minor upgrades and/or widening (by about 10 feet) to be used during pipeline construction. These upgrades would result in about 1.9 acres of new permanent land disturbance dispersed among the states of New York, Connecticut, and Massachusetts. Algonquin would also need to construct one new permanent access road from the existing North Fall River M&R Station site to the new Assonet M&R Station. This new access road would permanently disturb less than 0.1 acre of land; however, its location next to an existing industrial facility would not result in any significant effects on local wildlife populations. The use and modification of these access roads would not result in a significant impact on wildlife or wildlife habitat.

#### **4.6.1.5 Significant or Sensitive Wildlife Habitat Impacts and Mitigation**

Algonquin has minimized potential effects on significant or sensitive wildlife habitats by locating the majority of pipeline facilities within or adjacent to existing Algonquin pipeline rights-of-way or along existing utility rights-of-way, roads, and railroads to the maximum extent possible. Algonquin would also use the HDD crossing method at the Hudson River crossing to avoid direct affects to aquatic habitats and adjacent riparian habitats. Algonquin continues to address potential effects on significant, sensitive, and managed habitats through consultation with the appropriate federal and state agencies.

### **Vernal Pools**

Pipeline construction within vernal pools could have a number of potential effects including alteration of a pool's capacity for holding water, direct disturbance to amphibian adults, eggs and larvae, and removal of vegetation that could serve as egg attachment sites and cover. Pipeline construction activities near vernal pools could disturb or alter adjacent upland habitats for which vernal pool species also inhabit. The primary effects on vernal pools from pipeline maintenance activities would include the periodic removal of emergent and woody vegetation. This activity would potentially remove the vegetative structure that may serve as amphibian-egg-attachment sites and cover, and could disturb adult amphibians, eggs, and larvae in the pool.

The Project would not directly affect wildlife in nine of the 11 vernal pools identified by Algonquin in the study corridor, because these pools are located outside of the Project's proposed construction workspace areas and no clearing or crossing of these resources would occur. The Project may indirectly affect vernal pool wildlife temporarily during construction in adjacent upland habitats if vernal pool-associated species are present in those habitats during the time of construction. The Project

may directly affect vernal pools and the associated wildlife during construction in and around the two vernal pools located in the construction workspace in the Town of Cortlandt, New York. To minimize direct and indirect effects on vernal pools and their associated wildlife during construction and maintenance activities, Algonquin would treat all vernal pools as wetlands and protect them through adherence to the measures outlined in Algonquin's E&SCP. These measures would protect vernal pools from siltation and stormwater runoff, and provide a barrier to alert construction workers of the presence of this sensitive habitat. In addition, Algonquin would adhere to any permit conditions developed through consultation with the applicable federal and state agencies (see section 4.4). Therefore, while Project-related impacts could occur, they would be temporary in nature and would not significantly affect wildlife in these areas.

### **Hudson River Significant Coastal Fish and Wildlife Habitat**

Based on implementation of the HDD construction method for crossing of the Hudson River and the associated BDP Plan for monitoring the HDD program, the Project would not affect the lower Hudson River Reach SCFWH, which contains the Hudson Highlands, and the adjacent Lower Hudson River IBA.

### **Harriman State Park and Blue Mountain Reservation**

Algonquin's existing pipeline right-of-way is currently recognized as existing scrub-shrub and open field wildlife habitats, which are used by a variety of species inhabiting Harriman State Park and Blue Mountain Reservation. In general, the existing right-of-way is bordered by upland forest areas. Temporary, short-term impacts on wildlife species during construction of the pipeline may occur. However, long term significant habitat changes are not anticipated following right-of-way restoration, because the right-of-way would be revegetated following construction and continue to provide the same wildlife habitat functions and values that currently exist.

Algonquin met with the PIPC on January 8, 2014, to discuss the AIM Project's impacts on Harriman State Park. As a result of the meeting, Algonquin would conduct tree counts for the portions of the Project's pipeline construction work area located inside Harriman State Park and coordinate with the PIPC to address compensation for trees removed as part of the AIM Project. Because the majority of construction would be confined to Algonquin's existing right-of-way, long-term impacts on sensitive wildlife habitat within the park are not anticipated. However, Algonquin continues to consult with the NYSOPRHP and PIPC to address impacts on Harriman State Park. Given that consultation with NYSOPRHP and PIPC is not complete, **we recommend that:**

- **Prior to construction of the Haverstraw to Stony Point Take-up and Relay segment, Algonquin should file with the Secretary, for review and written approval of the Director of the OEP, a site-specific plan for the Harriman State Park, including any avoidance or mitigation measures developed with the NYSOPRHP and PIPC.**

We evaluated a potential pipeline variation to the north of the current pipeline right-of-way in the Blue Mountain Reservation in response to a comment we received about the proximity of the pipeline to a pond located south of the alignment and concerns about the potential impact of construction in this area on amphibians (see section 3.5.2.1).

#### **4.6.2 Aquatic Resources**

##### **4.6.2.1 Existing Aquatic Resources**

A total of 102 waterbody crossings (36 perennial streams and 65 streams with intermittent or ephemeral flow, and 1 pond) would be required for the AIM Project (see section 4.3.2). This section describes the fisheries resources present in the streams and rivers in the Project area based on the review

of USGS quadrangle maps and aerial photographs, on-site wetland and waterbody field surveys, and consultation with federal and state agencies.

Classification of fisheries habitat includes consideration of both chemical and biological characteristics and whether they support anadromous or catadromous fish. Physical and chemical properties that can be used to determine fishery classification include water temperature, salinity, and whether the waterbody is part of a marine, estuarine, or freshwater system.

The marine system occurs in areas of open ocean that are exposed to waves and currents, where hydrology is determined primarily by the ebb and flow of oceanic tides, and the salinity exceeds 30 parts per thousand (ppt) with little or no dilution or input from freshwater rivers and/or runoff (Cowardin, 1979).

In the estuarine system, water is at least occasionally diluted by freshwater runoff from the land. Estuarine fish species reside in tidal waters with salinities ranging from 0.5 to 20 ppt and spawning is typically in waters with salinities ranging between 5 and 20 ppt, from late spring through summer (Cowardin, 1979).

Freshwater systems have low salinity ranges and contain fisheries that are typically classified as coldwater, coolwater, or warmwater. Coldwater fisheries are characterized by lower than average water temperatures and the ability to support breeding fish, such as brook trout. Coolwater fisheries typically support mixed communities and/or fish species with optimal temperature ranges between warmwater and coldwater communities. Warmwater fisheries are characterized by fish, such as largemouth bass and common carp (Cowardin, 1979).

Anadromous fish are marine-living fish that travel upstream to spawn in freshwater (e.g., American shad or blueback herring). Conversely, catadromous fish are freshwater-living fish that travel downstream to breed in saltwater (e.g., American eel).

With the exception of the Hudson River and Dickey Brook, the majority of fisheries habitat crossed by the AIM Project pipeline facilities is classified as freshwater. Both the Hudson River and Dickey Brook support estuarine fisheries. Fish known to occur in the proposed Project area are summarized in table 4.6.2-1. Impacts on and mitigation for aquatic resources are discussed in section 4.6.2.3. Notably, no waterbodies are located within the proposed construction workspace areas at the existing compressor stations, existing M&R stations, or new M&R stations. As such, aquatic resource impacts would be limited to the proposed construction of Algonquin's pipeline facilities.

## **New York**

The waterbodies crossed by the pipeline segments in New York are located entirely within sub-basin level watersheds of the Lower Hudson Watershed in Rockland, Westchester, and Putnam Counties. These include the crossings of Minisceongo Creek, Cedar Pond Brook on the west side of the Hudson River, and Dickey Brook on the east side of the Hudson River. Streams found in these areas support primarily warmwater fishery species, but there are a number of waterbodies that are classified as coldwater because they support trout populations and/or provide trout spawning habitat. In addition, the NYSDEC stocks trout in a number of these waterbodies.

The largest waterbody crossed by the AIM Project is the Hudson River. This river is about 0.7 mile wide at the proposed pipeline crossing location. This crossing area is at the northern end of a nearly 50-mile tidal estuary that extends from the Bear Mountain Bridge in the north to Manhattan in the south. The pipeline crossing would be in an area considered to be part of the Hudson Highlands, which supports the deepest (up to 200 feet deep) and narrowest segment of the Hudson River as previously described.

TABLE 4.6.2-1

## Representative Fish Species in Waterbodies Crossed by the Pipeline Facilities for the AIM Project

**Freshwater**

Black crappie (*Pomoxis nigromaculatus*)  
 Bluegill (*Lepomis macrochirus*)  
 Brown bullhead (*Ameiurus nebulosus*)  
 Carp (*Cyprinus carpio*)  
 Chain pickerel (*Esox niger*)  
 Common shiner (*Luxilus cornutus*)  
 Creek chub (*Semotilus atromaculatus*)  
 Cutlips minnow (*Exoglossum maxillingua*)  
 Fallfish (*Semotilus corporalis*)  
 Gizzard shad (*Dorosoma cepedianum*)  
 Golden shiner (*Notemigonus crysoleucas*)  
 Largemouth bass (*Micropterus salmoides*)  
 Pumpkinseed (*Lepomis gibbosus*)

Pumpkinseed (*Lepomis gibbosus*)  
 Redbreast sunfish (*Lepomis auritus*)  
 Redfin pickerel (*Esox americanus americanus*)  
 Redside dace (*Clinostomus elongates*)  
 Rock bass (*Ambloplites rupestris*)  
 Smallmouth bass (*Micropterus dolomieu*)  
 Spottail shiner (*Notropis hudsonius*)  
 Sunfish (hybrid)  
 Tesselated darter (*Etheostoma olmsted*)  
 White sucker (*Catostomus commersoni*)  
 Yellow bullhead (*Ameirus natalis*)  
 Yellow perch (*Perca flavescens*)

**Coldwater**

Blacknose dace (*Rhinichthys atratulus*)  
 Brook trout (*Salvelinus fontinalis*)  
 Brown trout (*Salmo trutta*)

Longnose dace (*Rhinichthys cataractae*)  
 Rainbow Trout (*Oncorhynchus mykiss*)  
 Tiger Trout (*Salmo trutta X salvelinus fontinalis*)

**Anadromous**

Alewife (*Alosa pseudoharengus*)  
 American shad (*Alosa sapidissima*)  
 Atlantic sturgeon (*Acipenser oxyrinchus*)  
 Blueback herring (*Alosa aestivalis*)

Hickory shad (*Alosa mediocris*)  
 Rainbow smelt (*Osmerus mordax*)  
 Shortnose sturgeon (*Acipenser brevirostrum*)  
 Striped bass (*Morone saxatilis*)

**Catadromous**

American eel (*Anguilla rostrata*)

**Estuarine**

Atlantic silverside (*Menidia menidia*)  
 Bay anchovy (*Anchoa mitchilli*)  
 Four-spined stickleback (*Apeltes quadracus*)  
 Grubby sculpin (*Myoxocephalus aeneus*)  
 Hog choker (*Trinectes maculatus*)  
 Inland silverside (*Menidia beryllina*)  
 Mummichog (*Fundulus heteroclitus*)  
 Northern pipefish (*Syngnathus fuscus*)

Striped killifish (*Fundulus majalis*)  
 Striped mullet (*Mugil cephalus*)  
 Three-spined stickleback (*Gasterosteus aculeatus*)  
 Tidewater silverside (*Mendia peninsulae*)  
 White catfish (*Ameiurus catus*)  
 White perch (*Morone Americana*)  
 Winter flounder (*Pleuronectes americanus*)

**Marine**

Anchovy (*Anchoa mitchilli*)  
 Atlantic butterfish (*Pepilus triacanthus*)  
 Atlantic mackerel (*Scomber scombrus*)  
 Atlantic silversides (*Menidia menidia*)  
 Atlantic sea herring (*Clupea harengus*)  
 Black sea bass (*Centropristus striata*)  
 Bluefish (*Pomatomus saltatrix*)  
 Cobia (*Rachycentron canadum*)  
 Dusky shark (*Carcharinus obscurus*)

King mackerel (*Scomberomorus cavalla*)  
 Red Hake (*Urophycis chuss*)  
 Sandbar shark (*Carcharinus plumbeus*)  
 Sand tiger shark (*Odontaspis taurus*)  
 Scup (*Stenotomus chrysops*)  
 Spanish mackerel (*Scomberomorus maculatus*)  
 Summer flounder (*Paralichthys dentatus*)  
 Windowpane flounder (*Scophthalmus aquosus*)  
 Winter flounder (*Pleuronectes americanus*)

## **Connecticut**

Waterbodies crossed by the proposed pipeline segments in Connecticut range from small intermittent headwaters and tributaries (such as the unnamed tributaries found along Susquetonscut Brook) to mid-reach perennial waterways (such as Elisha Brook). The pipeline facilities would also cross a few larger streams and rivers including the Sawmill River, Still River, and Kohanza Brook in Western Connecticut. These waterbodies are classified as either coldwater or warmwater systems. Connecticut stocks trout in both warmwater and coldwater perennial waterbodies to support recreational fishing (CTDEEP, 2013h).

## **Massachusetts**

The West Roxbury Lateral would cross one perennial waterbody draining from an existing man-made pond at a golf course. The perennial stream exiting the golf course pond is an unnamed tributary of Purgatory Brook. This tributary has a crossing width of 9 feet, and would be crossed by the pipeline in the Town of Dedham at MP 0.1. The unnamed tributary of Purgatory Brook is classified as warmwater waterbody according to the Massachusetts Surface Water Quality Standards (314 CMR: 4.00).

### **4.6.2.2 Fisheries of Special Concern**

Consultations with the FWS, NOAA Fisheries, NYSDEC, CTDEEP, MDFW, and Rhode Island Natural Heritage Program were conducted to identify waterbodies that may contain federally or state-listed threatened, endangered, or candidate species and their habitat; EFH; coldwater fisheries; and other fisheries resources that could be considered fisheries of special concern (see section 4.7 for a discussion of threatened and endangered species).

Fisheries of special concern in the AIM Project area are listed in table 4.6.2-2 and described below. Potential construction impacts on aquatic resources, including fisheries of special concern, are discussed in section 4.6.2.3. Algonquin proposes to use a dry crossing method further described in section 4.3.2.3 for all waterbody crossings along the proposed pipeline route except for the crossing of the Hudson River in New York and the Still River in Connecticut, which would be crossed using the HDD method.

## **Minisceongo Creek and Tributaries**

The Haverstraw to Stony Point Take-up and Relay segment would cross Minisceongo Creek in Rockland County at MP 1.1 and 14 tributaries of Minisceongo Creek between MPs 0.6 and 2.3. Minisceongo Creek is a large boulder strewn perennial waterway with a gravel bottom and moderate flow. Its surrounding tributaries include both perennial and intermittent streams with sand/gravel substrates and moderate flow rates. Minisceongo Creek and its tributaries are designated as trout streams under New York Water Quality Standards. The river is used for recreational fishing and is stocked with brown trout (*Salmo trutta*) by the NYSDEC (NYSDEC, 2013h).

## **Cedar Pond Brook**

The Haverstraw to Stony Point Take-up and Relay segment would cross Cedar Pond Brook in Rockland County at MP 3.0. Cedar Pond Brook is a large perennial waterway with a gravel bottom and moderate flow. Cedar Pond Brook is designated as trout spawning waters under New York Water Quality Standards. The river is used for recreational fishing and is stocked with brown trout (*Salmo trutta*) by the NYSDEC (NYSDEC, 2013h, 2013i).



TABLE 4.6.2-2

**Fisheries of Special Concern Crossed by the Pipeline Facilities for the AIM Project**

Facility/Waterbody Name	MP	County	State	Fishery Concern <sup>a,b</sup>
<b>Replacement Pipeline</b>				
Haverstraw to Stony Point Take-up and Relay				
Unnamed Tributary (UNT) to Mahwah River	0.3	Rockland	NY	Trout Stocked Waters Downstream of Crossing Location
UNT to Minisceongo Creek	0.6	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	0.8	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	0.8	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	0.9	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	0.9	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	0.9	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	0.9	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	1.0	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	1.0	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	1.0	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	1.1	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	1.1	Rockland	NY	Trout Stocked Waters
Minisceongo Creek	1.1	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	1.7	Rockland	NY	Trout Stocked Waters
UNT to Minisceongo Creek	2.2	Rockland	NY	Trout Stocked Waters
Cedar Pond Brook	3.0	Rockland	NY	Trout Spawning Habitat
UNT to Cedar Pond Brook	3.0	Rockland	NY	Trout Spawning Habitat
Stony Point to Yorktown Take-up and Relay				
Hudson River	3.0	Rockland/ Westchester	NY	Threatened and endangered species, anadromous fisheries, commercial/recreational
Southeast to MLV 19 Take-up and Relay				
Still River	1.7	Fairfield	CT	Trout Stocked Waters
E-1 System Lateral Take-up and Relay				
Susquetonscut Brook	0.7, 2.0, 5.8	New London	CT	Trout Stocked Waters
UNT to Elisha Brook	8.3	New London	CT	Trout Stocked Waters
Elisha Brook	8.5	New London	CT	Trout Stocked Waters
<b>Loop Extension</b>				
E-1 System Lateral Loop Extension				
UNT to Stoney Brook	0.0	New London	CT	Trout Spawning Habitat
UNT to Stoney Brook	0.2	New London	CT	Trout Spawning Habitat
UNT to Stoney Brook	0.3	New London	CT	Trout Spawning Habitat
UNT to Stoney Brook	0.3	New London	CT	Trout Spawning Habitat

TABLE 4.6.2-2 (cont'd)

**Fisheries of Special Concern Crossed by the Pipeline Facilities for the AIM Project**

Facility/Waterbody Name	MP	County	State	Fishery Concern <sup>a,b</sup>
Falls Brook	0.8	New London	CT	Trout Stocked Waters
UNT to Stoney Brook	0.9	New London	CT	Trout Spawning Habitat
UNT to Stoney Brook	1.2	New London	CT	Trout Spawning Habitat

<sup>a</sup> Threatened and endangered species = federally or state-listed threatened, endangered, or candidate species.

<sup>b</sup> Trout Stocked Waters = waters where trout are stocked for recreational fishing. Trout Spawning Habitat = waters with naturally occurring spawning populations of trout.

**Hudson River**

The Stony Point to Yorktown Take-up and Relay segment would cross the Hudson River between MPs 3.0 and 3.9 using the HDD method. The Hudson River has semi-diurnal tides of 3 to 5 feet and moderate to high salinities up to 26 ppt over the course of the year due to a small percentage of freshwater inflows. Water temperature also varies throughout the year from 35.6 to 82.4 degrees Fahrenheit (°F). Additionally, high turbidity decreases the amount of light penetration to 3 to 16 feet below the surface. Dissolved oxygen levels are generally above 4.0 milligrams per liter; however, lower values may occur towards the bottom or at certain lagoon, inter-pier, and combined sewer outflow areas (FWS, 1997).

The lower Hudson River Estuary is designated as EFH. Anadromous fish in the Hudson River include the federally listed endangered shortnose and Atlantic sturgeon (see section 4.7.1 for discussion of these federally listed species), as well as American shad, striped bass, alewife, and blueback herring. The catadromous American eel can also be found in the lower reaches of the Hudson River.

Currently, regulated recreational fishing for striped bass, American eel, alewife, blueback herring, and other species is permitted in the Hudson River; however, the sustainability of alewife and blueback herring fisheries is currently being assessed by the NYSDEC. Commercial fishing for striped bass and most other species, besides baitfish, remains closed in the lower Hudson River due to concerns with PCB (NOAA Fisheries, 2001; NYSDEC, 2009b). Blue crab and shellfish species are also present in the Hudson River estuary, although harvest of these species is restricted.

**Dickey Brook**

Dickey Brook is classified as a freshwater stream that transitions to an estuarine environment along its lower reach where it joins the Hudson River. The separation point between these two systems is the bridge over Route 9 and Route 9A in the Town of Cortlandt. West of the bridge, Dickey Brook is designated as marine waters (Class SC) and is tidally influenced by the Hudson River. East of the Route 9/9A Bridge, Dickey Brook is designated as a freshwater system Class C waterbody by the NYSDEC. The Stony Point to Yorktown Take-up and Relay segment would cross this estuarine section once at MP 5.7 and then the freshwater section at MP 6.0. The Class SC and C designations indicate that the waters are not fit for swimming or human consumption, and fishing is the best use for this waterbody.

**Still River**

The Southeast to MLV 19 Take-up and Relay segment crosses the Still River at MP 1.7 in the City of Danbury, Connecticut. This waterbody crossing is part of the larger Interstate 84/Still River HDD that would extend from MPs 1.4 to 2.1. The river is a large, warmwater, perennial waterway with a sand substrate. Common warmwater game species within the Still River include largemouth bass, smallmouth

bass, and common carp (CTDEEP, 2013f). The Still River is a recreational fishery that is stocked with rainbow trout and brown trout by the CTDEEP during the spring (CTDEEP, 2013p).

### **Sawmill River**

One of the principal tributaries to the Still River, flowing north from the southern uplands, is the Sawmill River. The Southeast to MLV 19 Take-up and Relay segment would cross the Sawmill River at MP 0.3, where the river is about 8 feet wide.

### **Susquetonscut Brook**

The E-1 System Take-up and Relay segment would cross the Susquetonscut Brook in New London County, Connecticut at three locations: MPs 0.7, 2.0, and 5.8. Two crossings are in the Town of Lebanon and one is in the Town of Franklin. Susquetonscut Brook is a large, warmwater, perennial waterway with a sand and silt substrate. It has a moderately slow flow rate with a number of beaver impoundments, oxbows, and other backwaters located along its reach in the Project area. The Susquetonscut Brook supports a varied assemblage of warmwater game fish species, including largemouth bass and chain pickerel (CTDEEP, 2013f), and is stocked with brook trout and brown trout by the CTDEEP during the spring and fall stocking seasons (CTDEEP, 2013p).

### **Elisha Brook and Tributaries**

The E-1 System Take-up and Relay segment would cross Elisha Brook in the City of Norwich, Connecticut at MP 8.5, and one of its unnamed tributaries at MP 8.3. Elisha Brook is a minor, coldwater, perennial waterway with a sand, gravel, and cobble substrate. Its unnamed tributary is a minor intermittent stream that feeds the main channel. Elisha Brook has the potential for recreational fishing, and contains populations of brook trout (CTDEEP, 2013f).

### **Unnamed Tributaries to Stony Brook**

The E-1 System Lateral Loop Extension segment would cross six unnamed tributaries of Stony Brook in the Town of Montville, Connecticut at the following locations: MPs 0.0, 0.2, 0.3, 0.3, 0.9, and 1.2. Stony Brook is rated a Class 3 wild trout management area and contains spawning populations of brook trout (CTDEEP, 2013h). Stony Brook is also stocked with brown and rainbow trout (CTDEEP, 2013f, 2013p), and has more stringent fishing regulations in place than other waterbodies in the state (CTDEEP, 2013h). The unnamed tributaries of Stony Brook crossed by the proposed pipeline facilities contain both perennial and intermittent waterbodies, all of which likely contain trout feeding, and possibly spawning habitat. The tributaries likely support limited levels of recreational fishing.

### **Falls Brook**

The E-1 System Lateral Loop Extension segment would cross Falls Brook in the Town of Montville, Connecticut at MP 0.8. Falls Brook is a high velocity, shallow, perennial stream that provides coldwater fishery habitat and contains large boulders on a gravel and cobble substrate. It supports a varied assemblage of coldwater fish species, including four species of trout: brook, brown, rainbow, and tiger trout (*Salmo trutta X salvelinus fontinalis*) (CTDEEP, 2013f). Tiger trout are a hybrid species derived from a cross between brook and brown trout, and are highly prized by anglers (CTDEEP, 2013p). Falls Brook is used for recreational fishing, and is stocked by the CTDEEP with all four of the above-mentioned trout species (CTDEEP, 2013p).

#### 4.6.2.3 General Impacts and Mitigation

This section describes general impacts and measures that would be implemented to minimize impacts on fisheries and aquatic resources in the Project area, including EFH and other fisheries of special concern. Specific effects on EFH are discussed in section 4.6.2.4.

Construction and modifications to existing aboveground facilities are not expected to result in significant affects to any waterbodies or fisheries. Thus, the following section focuses on activities associated with the construction of the proposed pipeline facilities. Additional details regarding waterbody crossing methods are provided in sections 2.3 and 4.3.2.3, and the proposed crossing method for each waterbody potentially affected by the Project is listed in table I-1 in appendix I.

##### Dry Crossing Method

As discussed previously, Algonquin proposes to use a dry crossing method (i.e., flume or dam-and-pump) to install all but two of the waterbody crossings along the proposed pipeline segments. None of these other waterbodies includes designated EFH. The other two waterbodies would be crossed using the HDD method. Dry crossing methods involve the installation of a flume pipe(s) and/or dam and pump prior to trenching to divert the stream flow around the construction area and allow trenching of the stream crossing in drier conditions, isolated from the stream flow. These methods typically result in lower sedimentation and associated turbidity impacts when compared to conventional wet crossing methods.

The impacts of the dry crossing methods on fishery resources could include:

- increased sedimentation and water turbidity immediately downstream of the construction work area;
- direct contact with relatively immobile prey organisms (e.g., benthic and epibenthic) that may be food resources for fish;
- alteration or removal of aquatic habitat cover;
- introduction of pollutants through possibly contaminated bottom sediments or spills of fuels or lubricants;
- impingement or entrainment of fish and other biota associated with the use of water pumps at dam and pump crossings; and
- downstream scour associated with use of pumps or flume discharge.

In addition, removal of streamside vegetation at the crossings may reduce shading of the waterbody, diminish escape cover, and could, in small areas where flow is minimal or constrained, result in locally elevated water temperatures.

In accordance with the FERC Procedures, Algonquin would conduct in-water work, except that required to install or remove equipment, outside of the cold water fisheries timing restriction window (June 1 through September 30) unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis. For example, in its comments provided on the draft EIS, the CTDEEP stated that the seasonal in-water construction window of June 1 through September 30 would apply for all waterbodies regardless of classification.

The use of dry crossing construction techniques would minimize the potential for erosion and sedimentation within the stream channel by confining impacts to the construction work areas and minimizing impacts on downstream reaches. Additionally, Algonquin would strive to complete each pipeline installation and the associated bed and bank restoration work within 24 hours for minor crossings and 48 hours for intermediate crossings. Algonquin would also implement the erosion and sedimentation control measures described in its E&SCP to contain materials within the construction work areas and minimize impacts on fisheries due to changes in water quality.

Use of a flume or dam and pump crossing would have a direct impact on benthos and alteration of aquatic habitats. The impact would result from installation and removal of the temporary dams built to isolate the construction work areas, and from excavation of the pipeline trench. Installation of the temporary dams typically involves the placement of sand bags or equivalent dam diversion structures upstream and downstream of the construction work areas. The footprint of the dams is typically small but would temporarily bury existing benthic organisms within the footprint of the dams. Excavation of the pipeline trench would also directly impact existing benthos through removal and temporary stockpiling in upland areas of bottom sediment. These effects would be limited to a relatively small area. Following installation of the pipeline, the bed and banks would be restored and the temporary dams would be removed. The pipeline trench would be backfilled with the original sediment, restoring similar habitat conditions. Both the restored stream bed and the area beneath the dams would likely be colonized fairly quickly by benthic species from the adjacent areas of the waterbody.

The use of pumps to maintain stream flow around the construction work areas could entrain or impinge fish and ichthyoplankton. This potential impact would be minimized by screening the intakes of the pumping system, as described in Algonquin's E&SCP. However, some small fish and larvae as well as all forms of ichthyoplankton would still be subject to entrainment, although the duration of this effect would be short (24 to 48 hours) and would cease when the crossing is completed and normal streamflow is restored.

The dam and pump crossing method could also result in sediment scour downstream of the crossing if measures were not implemented to dissipate the energy of the pump discharge. As described in the E&SCP for the AIM Project, Algonquin would direct all discharges from the pumps through energy dissipaters to minimize scour and downstream siltation.

The use of the dam and pump crossing method could also temporarily restrict fish passage during the 24 to 48 hours it takes to install the pipeline. This short-term and localized interruption of fish passage is not anticipated to dramatically affect the migration of fish within the stream systems that would be crossed by the Project.

Impacts resulting from tree clearing adjacent to each crossing would be minimal due to Algonquin's use of existing cleared rights-of-way and/or previously developed corridors for the majority of the proposed pipeline route. Moreover, following the installation of the pipeline, streambanks would be restored, stabilized with erosion control measures, and revegetated.

Algonquin would implement procedures to further minimize potential impacts associated with loss of riparian shade and vegetation cover. Clearing of trees and other vegetation would be restricted to only what is necessary to safely construct and operate the pipelines, although use of existing rights-of-way would minimize these impacts. Once construction is complete, streambeds and banks would be quickly restored to preconstruction conditions to the fullest extent possible. Restoration, bank stabilization, and revegetation efforts, which are defined in the AIM Project E&SCP, would minimize the potential for erosion from the surrounding landscape.

In Connecticut, the standard dry crossing methods would be augmented to include recommendations set forth by the CTDEEP (CTDEEP, 2013c). The CTDEEP recommended that the restoration of all stream crossings in Connecticut, not just coldwater resources, have the top 12 inches of native streambed armament scraped off from the existing streambed, stockpiled, and restored back to its original profile, mimicking the physical habitat (riffle, pool, run, etc.) that was present prior to disturbance. The CTDEEP also recommended photo-documentation of the pre-existing stream conditions to assist in the restoration work. The CTDEEP has specific recommendations for rock used for any stream bank restoration (i.e., use more natural rounded stone cobbles as opposed to riprap) and the planting of shrubs in riparian zones to restore riparian functions (CTDEEP, 2013c). Algonquin would adhere to all of CTDEEP's recommendations and will finalize the details with the CTDEEP through the permitting processes.

Similarly, the NYSDEC has recommended that the top 12 inches of native streambed material be removed from the crossing area, stockpiled, and placed back in the channel and restored to preconstruction condition. The NYSDEC also recommends that dry stream crossings be conducted using the dam and pump method and that Algonquin require the contractor to have back-up pumps on-site and available in case of mechanical failure. Algonquin would also have 24-hour on-site monitoring during pumping operations, to minimize the chances of any problems at the crossing sites. To achieve a good seal with the channel bottom, Algonquin would use a combination of plastic sheeting and sand bags at the stream dam locations. As per the NYSDEC's requirement, no liquid concrete is to be placed into any watercourse. The NYSDEC has specific recommendations on the rock used for any stream bank restoration and no riprap armoring or geotextile fabric is to be used for stream bank stabilization. The NYSDEC recommends using a combination of jute matting, seed mixes, and riparian vegetation plantings for stream bank restoration.

In summary, implementation of Algonquin's construction, restoration, and mitigation procedures would result in only limited, short-term impacts on fishery resources, and the aquatic habitats upon which these fishery resources depend. Invertebrate populations would recolonize the crossing area and all temporary construction workspace areas would revert to their original condition, including re-establishment of riparian cover. Furthermore, operation and routine maintenance of the pipeline rights-of-way would not have any noticeable impact on fishery resources in the Project area.

### **HDD Crossing Method**

Algonquin proposes to use the HDD method to cross the Hudson River in New York along the Stony Point to Yorktown Take-up and Relay and the Still River in Connecticut along the Southeast Take-up and Relay segment. The Hudson River HDD crossing would take place in soft soils above the bedrock and old channel lag deposits. The results of the preliminary hydrologic fracture evaluation are discussed in section 4.3.2.3. Algonquin has prepared and would implement the measures identified in its BDP Plan (see appendix J). Algonquin is proposing to use municipal sources of water for the HDD operations. As such, the Project would not significantly affect aquatic resources in the Hudson River in New York or the Still River in Connecticut.

### **Blasting**

Some limited blasting could be required along the AIM Project pipeline segments to increase the depth and width of the existing trenches to accommodate the larger diameter pipeline. Most streambeds with shallow bedrock would likely be of sedimentary rock and thus would not require blasting. In instances where the rock would not be rippable, drilling and blasting would be used to install the pipeline. Potential rock removal and blasting in waterbodies is further discussed in section 4.3.2.3. Rock removal is also discussed in sections 2.3.1 and 4.1.6 and a Rock Removal Plan is provided in appendix E.

Potential adverse effects of blasting in waterbodies could include direct mortality of organisms in the immediate vicinity of the blast. Blasting can also have same short-term adverse impacts, similar to trenching, including reduced macroinvertebrate prey base, alteration of substrate characteristics, and loss of large woody debris and structure.

Algonquin would mitigate the effects of blasting on fish species in several ways. As explained in section 4.3.2.6, Algonquin would file a schedule with FERC identifying when blasting would occur within each waterbody greater than 10 feet wide and within any designated coldwater fishery, and provide the schedule to the applicable agencies. The blasting contractor would use delays and stemming to dampen the shock wave. The nature of the material that would require blasting and the short duration of blasting activities would help minimize the amount of fine-grained material released to the aquatic habitat. Furthermore, resident fish inhabiting the area would already be dispersed due to active drilling and preparation of the construction workspace area at the crossing for the particular dry crossing technique selected. Once complete, debris would be removed as needed so as not to interfere with downstream flow. Therefore, by implementing the measures identified in the Rock Removal Plan and additional measures identified above, impacts on aquatic resources from blasting would be adequately minimized and short-term.

### **Hydrostatic Test Water**

Algonquin would ensure that hydrostatic test water appropriations and discharges would not result in a significant entrainment of fish, loss of habitat, or an adverse effect to water quality. For non-municipal sources of hydrostatic test water, the withdrawal intake hoses would be fitted with intake screen devices that would eliminate the entrainment of fingerling and small fish during water withdrawal. Discharge would comply with regulatory permit conditions and be controlled to prevent scour and sedimentation, flooding, or the introduction of foreign or toxic substances into the aquatic system. With these measures, the intake of water for hydrostatic testing would not significantly impact aquatic resources.

### **Spill Prevention and Control Countermeasures**

Accidental spills of construction-related fluids (e.g., oil, gasoline, or hydraulic fluids) on the landscape or directly into waterbodies could be debilitating to biota, depending on the type and quantity of the spill, and the dispersal and attenuation characteristics of the waterbody. To reduce the potential for surface water contamination, Algonquin would adhere to its SPCC Plan.

Potential impacts on fish are largely attributable to effects on water quality and other habitat factors that influence the health of the aquatic ecosystem. Minimization and mitigation procedures related to water quality are discussed in detail in section 4.3.2.6. To minimize the potential for spills from equipment use, Algonquin's SPCC Plan would be implemented. Refueling or other handling of hazardous materials within 100 feet of wetland and waterbody resources would not be allowed. If the 100-foot setback could not be met, these activities would be performed under the supervision of an EI in accordance with Algonquin's SPCC Plan. Algonquin would conduct routine inspections of tank and storage areas to help reduce the potential for spills or leaks of hazardous materials, as specified in the SPCC Plan. Implementation of these measures would adequately minimize the chances of a spill.

#### **4.6.2.4 Essential Fish Habitat**

The MSA (16 USC 1801 et seq.) established a management system for marine fisheries resources in the United States. In particular, Congress charged the NOAA Fisheries and the fishery management councils, along with other federal and state agencies and the fishing community, to identify habitats essential to managed species, which include marine, estuarine, and anadromous finfish, mollusks, and



crustaceans. The habitat is identified as EFH and defined to include “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

Federal agencies that authorize, fund, or undertake activities that may adversely impact EFH must consult with NOAA Fisheries. Although absolute criteria have not been established for conducting EFH consultations, NOAA Fisheries recommends consolidated EFH consultations with interagency coordination procedures required by other statutes, such as NEPA or the ESA, in order to reduce duplication and improve efficiency.

We reviewed the information provided by Algonquin, conducted our own analysis, and consulted with NOAA Fisheries. Our analysis of the potential for Project-related effects on EFH and managed species is provided in this EIS. As a result, FERC requests NOAA Fisheries consider the information provided here as the EFH assessment for the Project.

### **Managed Fish Species and Essential Fish Habitats**

NOAA Fisheries Northeast Regional Office EFH designation tables were reviewed to identify managed species for which EFH could potentially occur within the Project area. This review identified 16 managed species that could occur in the Project area. Information on these 16 managed species and the EFH characteristics of the various life stages is provided in table 4.6.2-3. A list of the waterbodies containing EFH species is included in table 4.6.2-2.

The proposed Hudson River crossing area for the Stony Point to Yorktown Take-up and Relay segment is located to the north of the designated EFH associated with the lower Hudson River Estuary (NOAA Fisheries, 2013a, 2013c). The estuarine water column provides seasonal nursery areas for young developmental stages, but also as migratory habitat for anadromous species.

Although the Stony Point to Yorktown Take-up and Relay segment would cross the Hudson River up-river of the lower Hudson River designated EFH area, the crossing area may contain habitat that is essential to certain EFH species. The area of the Hudson River that would be crossed by the Project is characterized by an estuarine water column with a lower relative salinity ranging from 0 to 6 ppt (Yozzo et al., 2005). The Hudson River system has a large mixing zone, where fresh and tidal waters come together. NOAA Fisheries expressed concern regarding the Project’s proposed crossing of other tidally influenced or freshwater streams that could support EFH species and is reviewing the proposed waterbody crossings and crossing methods for the Project. Through consultation with NOAA Fisheries, we have determined that the only waterbody crossing where EFH species could potentially occur is the Hudson River (see table 4.6.2-2).

### **Assessment of Potential Impacts on EFH**

Many of the potential effects on EFH and managed fish species would be similar to those discussed for surface waters and aquatic species and their habitats in sections 4.3.2.6 and 4.6.2.3.

Because the Hudson River Estuary supports EFH and managed fish species, Algonquin proposes to install the Stony Point to Yorktown Take-up and Relay across the Hudson River using the HDD method and employing the BMPs outlined in Algonquin’s BDP Plan (see appendix J). Algonquin has performed geotechnical analysis of the proposed crossing and identified that drilling would occur in soft soils. If successfully employed, the HDD method would avoid direct effects, including disturbance to the bed, banks, and EFH species, as well as non-mobile life stages of managed species.

TABLE 4.6.2-3

Summary of Essential Fish Habitat and General Habitat Parameters for the AIM Project <sup>a</sup>

EFH Species	Life Stage <sup>b</sup>	EFH Characteristics <sup>c</sup>
Red hake <i>Urophycis chuss</i>	Egg	Surface waters; <10 °C; <25 ppt
	Larvae	Surface waters; <19 °C; <200 m; >0.5 ppt
	Juvenile	Shell fragment bottom habitats; <16 °C; <100 m; 31-33 ppt
	Adult	Sand/mud bottom depressions; <12 °C; 10-130 m; 33-34 ppt
Winter flounder <i>Pleuronectes americanus</i>	Egg	Demersal; sand/muddy sand/mud/gravel bottom; <10 °C; <5 m; 10-30 ppt
	Larvae	Pelagic and bottom waters; <15 °C; <6 m; 4-30 ppt
	Juvenile	Mud/fine sand bottom habitats; <28 °C; 0.1-10 m; 5-33 ppt
	Adult	Mud/sand/gravel estuarine bottom habitats; <25 °C; 1-100 m; 15-33 ppt
Windowpane flounder <i>Scophthalmus aquosus</i>	Egg	Surface waters; <20 °C; <70 m
	Larvae	Pelagic waters; <20 °C; <70 m
	Juvenile	Mud/fine sand bottom habitats; <25 °C; 1-100 m; 5.5-36 ppt
	Adult	Mud/fine sand bottom habitats; <26.8 °C; 1-75 m; 5.5-36 ppt
Atlantic herring <i>Clupea harengus</i>	Larvae	Pelagic waters; <16 °C; 50-90 m; 32 ppt
	Juvenile	Pelagic waters and bottom habitats; <10 °C; 15-135 m; 26-32 ppt
	Adult	Pelagic waters and bottom habitats; <10 °C; 20-130 m; >28 ppt
Bluefish <i>Pomatomus salatrix</i>	Juvenile	Mixing/seawater portions of estuaries
	Adult	Estuarine waters; >25 ppt
Atlantic butterfish <i>Peprilus triacanthus</i>	Larvae	Pelagic waters; mixing portions of estuaries; 9-19 °C; 10-1,800 m
	Juvenile	Pelagic waters; mixing/seawater portions of estuaries; 3-28 °C; 10-365 m
	Adult	Pelagic waters; mixing/seawater portions of estuaries; 3-28 °C; 10-365 m
Atlantic mackerel <i>Scomber scombrus</i>	Juvenile	Pelagic waters; mixing/seawater portions of estuaries; 4-22 °C; shore to 320 m
	Adult	Pelagic waters; mixing/seawater portions of estuaries; 4-16 °C; shore to 380 m
Summer flounder <i>Paralichthys dentatus</i>	Larvae	Pelagic shelf waters; mixing/seawater portions of estuaries; nearshore 10-70 m
	Juvenile	Demersal; mixing/seawater portions of estuaries; salt marsh creeks/ seagrass beds/mudflats/open bays; >3 °C; 10-30 ppt
	Adult	Demersal waters; shallow mixing/seawater portions of estuaries; shallow coastal waters
Scup <i>Stenotomus chrysops</i>	Egg	Mixing/seawater portions of estuaries; 13-23 °C; >15 ppt
	Larvae	Mixing/seawater portions of estuaries; 13-23 °C; >15 ppt
	Juvenile	Demersal waters; mixing/seawater portions of estuaries; sand/mud/mussel and eelgrass beds; >7 °C; >15 ppt
	Adult	Demersal waters; mixing/seawater portions of estuaries; >7 °C
<b>Coastal Migratory Pelagics</b>		
Black sea bass <i>Centropristis striata</i>	Juvenile	Demersal waters; mixing/seawater portions of estuaries; rough bottom; shellfish/eelgrass beds; structures >6 °C; >18 ppt
	Adult	Demersal waters; mixing/seawater portions of estuaries; structured habitat; >6 °C
King mackerel <i>Scomberomorus cavalla</i>	Egg	Pelagic waters; > 17 °C; 32-36 ppt
	Larvae	Pelagic waters; 26-31 °C; 26-37 ppt
	Juvenile	Pelagic waters; > 20 °C
	Adult	Pelagic waters; > 20 °C

TABLE 4.6.2-3 (cont'd)		
Summary of Essential Fish Habitat and General Habitat Parameters for the AIM Project <sup>a</sup>		
EFH Species	Life Stage <sup>b</sup>	EFH Characteristics <sup>c</sup>
Spanish mackerel	Egg	Pelagic waters; > 17 °C; 32-36 ppt
<i>Scomberomorus maculatus</i>	Larvae	Pelagic waters; 19-30 °C; > 28 ppt
	Juvenile	Estuaries; > 17 °C; 32-26 ppt
	Adult	Estuaries; pelagic waters; 21-31 °C; 32-36 ppt
Cobia	Egg	Offshore
<i>Rachycentron canadum</i>	Larvae	Offshore
	Juvenile	Coastal waters; high salinity
	Adult	Estuaries; mud, sand, coral reef substrates
<b>Highly Migratory Species</b>		
Sandbar shark	Neonates	Shallow coastal waters; < 25 m
<i>Carcharhinus plumbeus</i>		
Dusky shark	Neonates	Shallow coastal waters, inlets, estuaries; < 25 m
<i>Carcharhinus obscurus</i>		
Sand tiger shark	Neonates	Shallow coastal waters; < 200 m
<i>Carcharias taurus</i>		
<sup>a</sup> Based on 10-minute by 10-minute latitudinal/longitudinal designated EFH quadrants. <sup>b</sup> Designated EFH along the Project only in areas where EFH characteristics are present. <sup>c</sup> °C = degrees Celsius; m = meters; ppt = parts per thousand; > = greater than; < = less than Source: <a href="#">NOAA Fisheries, 2013c</a>		

While avoiding direct impacts, the HDD method is not without risks. The potential effects on aquatic resources associated with HDD can include:

- erosion or sedimentation associated with onshore operation of the HDD equipment;
- inadvertent hazardous material spills associated with operation of construction equipment; and
- inadvertent release of drilling fluids.

Construction related to the onshore operation of the HDD equipment could cause run-off of sediment into the waterbody, which could adversely affect managed fish species. Also, accidental spills of petroleum products or hazardous materials into or near the waterbody could be toxic to any life stage, depending on the type and quantity of the spill. As discussed in sections 4.3.2.6 and 4.6.2.3, Algonquin would minimize the potential impacts on aquatic resources during construction through implementation of the measures identified in its E&SCP and BDP Plan (see appendix J), which we find acceptable.

NOAA Fisheries concurred with the assessment that the Project would have *no effect* on federally listed sturgeon (see section 4.7.1.1) given the proposed use of the HDD construction method and implementation of Algonquin's proposed BDP Plan for the Hudson River crossing. Additionally, no water would be withdrawn from the Hudson River to support Project construction, such that direct effects from entrainment of managed fish species and their prey would also be avoided. As indicated in section 4.3.2.3, if some drilling fluid is released into the river during a hydraulic fracture, the volume would be minimal and would not accumulate due to the rapid drilling rates. Due to the river current, marine traffic, existing turbidity, and other pollutants that contribute to the discoloration of a major waterbody like the

Hudson River, it is unlikely that an inadvertent release would be identifiable. Therefore, we conclude that the Project would have minimal, if any, adverse effects on EFH or managed species associated with the proposed HDD of the Hudson River. As supported through consultation, NOAA Fisheries concurs with our determination (NOAA Fisheries, 2014c).

#### **4.7 SPECIAL STATUS SPECIES**

Special status species are those for which federal or state agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed threatened or endangered species, migratory birds protected by the MBTA; eagles protected by the Bald and Golden Eagle Protection Act (BGEPA); marine mammals protected by the Marine Mammal Protection Act (MMPA); and species that are designated as state-listed or receive special management consideration by New York State, Connecticut, Rhode Island, and Massachusetts. Species listed as candidates or proposed for federal listing by the FWS or NOAA Fisheries are also included here as special status species due to the potential for these species to become listed as threatened or endangered during the term of the Project.

##### **4.7.1 Federally Listed Species**

Section 7 of the ESA requires federal agencies to ensure that any actions authorized, funded, or carried out by the agencies do not jeopardize the continued existence of a federally listed threatened or endangered species, or result in the destruction or adverse modification of designated critical habitat for a federally listed species. The FWS, which is responsible for terrestrial and freshwater species and NOAA Fisheries, which is responsible for marine and anadromous species, jointly administer the law. As the lead federal agency for authorizing the Project, FERC is required to consult with the FWS and NOAA Fisheries to determine whether federally listed endangered or threatened species or designated critical habitat are found in the vicinity of the Project, and to evaluate the proposed action's potential effects on those species or critical habitat.

For actions involving major construction activities with the potential to affect listed species or designated critical habitat, the FERC must report its findings to the FWS and NOAA Fisheries in a BA for those species that may be affected. If it is determined the action is likely to adversely affect listed species or designated critical habitat, the FERC is required to initiate formal consultation with the appropriate agency. In response, the FWS or NOAA Fisheries would issue a Biological Opinion (BO) as to whether or not the action would likely jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

Algonquin, acting as the FERC's non-federal representative for the purpose of complying with section 7(a)(2) of the ESA, initiated informal consultation with NOAA Fisheries Protected Resources Division on May 20, 2013. NOAA Fisheries identified two federally listed threatened or endangered species (Atlantic and shortnose sturgeon) under their jurisdiction that are known to occur in the Hudson River within the Project area. As discussed in section 4.7.1.1, the Project would have *no effect* on the shortnose or Atlantic sturgeon. In a letter dated April 18, 2014, NOAA Fisheries concurred with this determination and consultation for the Atlantic and shortnose sturgeon is complete (NOAA Fisheries, 2014a).

Algonquin also initiated informal consultation with the FWS Ecological Field Services Office in New England on May 17, 2013 and New York on May 20, 2013 regarding federally listed threatened or endangered species potentially occurring in or near the Project area. The FWS identified seven federally listed threatened or endangered species (piping plover, roseate tern, Puritan tiger beetle, Indiana bat, bog turtle, northern red-bellied cooter, and small whorled pogonia), as well as one candidate species (New England cottontail) and one species proposed for listing as endangered (northern long-eared bat) that are known to occur in the Project area. These species are summarized in table 4.7.1-1 and discussed in sections 4.7.1.2 (federally listed) and 4.7.1.3 (proposed and candidate).

TABLE 4.7.1-1

## Federally Listed Species Potentially Occurring Within the Vicinity of the AIM Project

Species/ Common Name ( <i>Scientific Name</i> )		Federal Status <sup>a</sup>	Pipeline Facilities					Aboveground Facilities <sup>b</sup>										Determination <sup>c</sup>	
			NY	CT	MA	NY	CT							RI	MA				
			Haverstraw to Stony Point T&R Stony Point to Yorktown T&R Southeast to ML V 19 T&R Southeast to ML V 19 T&R Line 36A Loop Extension E-1 System Lateral T&R E-1 System Lateral Loop West Roxbury Lateral Stony Point Compressor Station Southeast Compressor Station Stony Point M&R Peekskill M&R Cortland M&R Cromwell Compressor Station Chaplin Compressor Station Oakland Heights M&R West Danbury M&R Southbury M&R Waterbury M&R Guilford M&R Farmington M&R Glastonbury M&R Middletown M&R Montville M&R Willimantic M&R Pomfret M&R Burrillville Compressor Station Assonet M&R West Roxbury M&R Middleborough M&R																
<b>Fish</b>																			
Atlantic sturgeon ( <i>Acipenser oxyrinchus oxyrinchus</i> )	E	X																	No effect
Shortnose sturgeon ( <i>Acipenser brevirostrum</i> )	E	X																	No effect
<b>Birds</b>																			
Piping plover ( <i>Charadrius melodius</i> )	T																		No effect
Roseate tern ( <i>Sterna dougallii dougallii</i> )	E																		No effect
<b>Invertebrates</b>																			
Puritan tiger beetle ( <i>Cicindela puritan</i> )	T																		No effect
<b>Mammals</b>																			
Indiana bat ( <i>Myotis sodalis</i> )	E	X X X	X X X X	X	X X X	X	X X X	X	X X X X X X X X X X X X X X X X	X	X X								Not likely to adversely affect
Northern long-eared bat ( <i>Myotis septentrionalis</i> )	PE	X X X	X X X X	X	X X X	X	X X X	X	X X X X X X X X X X X X X X X X	X	X X								Not likely to jeopardize the continued existence
New England cottontail ( <i>Sylvilagus transitionalis</i> )	C	X	X X																Would not contribute to a trend toward federal listing
<b>Reptiles</b>																			
Bog turtle ( <i>Glyptemys muhlenbergii</i> )	T	X X X	X				X X X X X												Not likely to adversely affect
Northern red-bellied cooter ( <i>Pseudemys rubriventris</i> )	E																X		No effect
<b>Plants</b>																			
Small whorled pogonia ( <i>Isotria medeolodes</i> )	E	X X				X													No effect

<sup>a</sup> Abbreviations: (E) Endangered; (T) Threatened; (C) Candidate; (PE) Proposed Endangered.<sup>b</sup> Aboveground facilities include facilities where the FWS expressed concern with regards to a particular species or facilities where vegetation would be affected as described in section 4.5 of this EIS.<sup>c</sup> The FERC's determination for federally listed threatened and endangered species and preliminary determination for candidate and proposed species should they be listed during the term of the Project.

In compliance with section 7 of the ESA, FERC requested that the FWS consider the draft EIS, along with various survey reports submitted by Algonquin directly to the FWS, as the draft BA for the AIM Project. After issuance of the draft EIS, Algonquin submitted additional survey reports and other information to both the FWS and FERC relative to the Indian and northern long-eared bats. On October 24, 2014, FERC consulted with the FWS regarding Algonquin's survey results and to request concurrence on our effects determinations for the species listed in table 4.7.1-1 under its jurisdiction. The FWS concurred with our findings and confirmed that the AIM Project is unlikely to adversely affect any federally listed species under its jurisdiction as listed in the table (FWS, 2014l). At the time of publication of this final EIS, the FWS is in the process of issuing a letter of concurrence for the AIM Project, which will conclude consultation under section 7 of the ESA (FWS, 2014l).

#### **4.7.1.1 Species Under NOAA Fisheries Jurisdiction**

NOAA Fisheries identified two species under their jurisdiction that are likely to occur where the Stony Point to Yorktown Take-up and Relay segment would cross the Hudson River. These fish species include the Atlantic sturgeon and shortnose sturgeon, for which all life stages are known to transit through the Project area. Atlantic sturgeon are also known to concentrate and overwinter within the Project area. As such, both species have the potential to be present throughout the year.

##### **Atlantic Sturgeon**

The Atlantic sturgeon is listed as an endangered species for the New York Bight distinct population segment (DPS) located within the Hudson River (NOAA Fisheries, 2013a). Atlantic sturgeon of the New York Bight DPS are also listed as protected/critically imperiled in New York (NYNHP, 2013b). The New York Bight DPS is the only DPS of Atlantic sturgeon known to spawn in the Hudson River, although other DPSs of Atlantic sturgeon are known to be present within the Hudson River. As such, sub-adult and adult Atlantic sturgeon from any DPS may be present within the Hudson River as far north as the Troy Dam, and have the potential to occur within the Project area (NYNHP, 2013d; NOAA Fisheries, 2013d).

The Atlantic sturgeon is a large, anadromous fish that prefers deeper parts of large rivers with moderate flow. Adults typically spawn between April and June from Canada to the mid-Atlantic, with timing depending on the latitude. Following spawning, males may remain in the river or lower estuary until the fall; females typically exit the rivers within 4 to 6 weeks. Juveniles move downstream and inhabit brackish waters for a few months, and when they reach a size of about 30 to 36 inches, they move into near shore coastal waters (NOAA Fisheries, 2013a).

Catches of immature sturgeon (age 1 year and older) suggest that juveniles occupy waters in the Hudson River within the Project area in both summer and fall (NOAA Fisheries, 2013d). Atlantic sturgeon adults are likely to migrate through the proposed crossing area in the spring as they move from oceanic overwintering sites to upstream spawning sites and back to lower reaches of the estuary or oceanic areas in the late spring and early summer. Atlantic sturgeon adults are most likely to occur in the AIM Project area from May through September (NOAA Fisheries, 2013d).

##### **Shortnose Sturgeon**

The federally endangered shortnose sturgeon is also state-listed as endangered/critically imperiled in New York (NYNHP, 2013b). Shortnose sturgeon is a large, long-lived benthic-feeding species of anadromous fish. Habitats primarily include slow-moving riverine, estuarine and marine near shore habitats. Shortnose sturgeons are known to occur in the Hudson River from the tip of Manhattan north to the Troy Dam (NOAA Fisheries, 2013d, 2013f).

Shortnose sturgeon travel upriver to spawn (NOAA Fisheries, 2013f). In the Hudson River, adults have been reported throughout the year in both freshwater and upper tidal saline areas. From late

spring to early fall, sturgeon typically use the deep channels in fresh and brackish habitats. In late fall, most adults congregate in a single wintering site (Bain et al., 2007), located south of Kingston New York (NOAA Fisheries, 2013d). Each year, spawning begins in late March through mid-April, when water temperatures increase to 8 to 9 degrees Celsius (°C), and usually ends once temperatures reach 12 to 15 °C (NOAA Fisheries, 1998, 2013b). Reproductively active adults begin their upstream migration to the spawning grounds that extend below the federal dam at Troy to about Coeymans, New York (NOAA Fisheries, 2013d).

After spawning, adults quickly disperse, traveling to their summer feeding grounds, which encompass approximately 86 river miles from north of Yonkers to South of Coxsackie, New York (NOAA Fisheries, 2013d.). Juveniles are found typically at the saltwater/freshwater interface, and move back and forth in the low salinity area during the summer. In the Hudson River, juveniles are usually found in channels over silt substrates (NOAA Fisheries, 1998). Age to maturity varies throughout the range, but appears to be at approximately 7 to 10 years to first spawn for females in the Hudson River, with males maturing slightly earlier (NOAA Fisheries, 1998).

### **Conclusions for Atlantic and Shortnose Sturgeon**

NOAA Fisheries indicated that shortnose and Atlantic sturgeon are present in the Hudson River near Algonquin's proposed pipeline crossing location year-round (NOAA Fisheries, 2013d). In a letter dated May 30, 2014, NOAA Fisheries requested Algonquin avoid in water work from October 1 through April 1 of any year to avoid adverse effects on the Atlantic and shortnose sturgeon (NOAA Fisheries, 2013d). Adhering to NOAA Fisheries request, Algonquin would install the Stony Point to Yorktown Take-up and Relay segment across the Hudson River using the HDD method, avoiding any in water work in the Hudson River. The primary environmental concern associated with an HDD is the potential for an inadvertent release of drilling fluids into waterbodies or wetlands during drilling operations. Algonquin has developed a BDP Plan (see appendix J) for monitoring the HDD and responding in the event of an inadvertent release. If an inadvertent release were to occur, the Atlantic and shortnose sturgeon would not be effected since the HDD drilling fluids are believed non-toxic to sturgeon. Additionally, the increase in turbidity associated with an inadvertent release would be temporary, confined to the area of the release due to the rapid settling rate of bentonite, and considered insignificant due to the existing turbidity levels in the Hudson River (NOAA Fisheries, 2014b).

Based on implementation of the HDD method for crossing the Hudson River with the associated BDP Plan and existing turbidity levels in the Hudson, the Project would have *no effect* on the shortnose or Atlantic sturgeon. In a letter dated April 18, 2014, NOAA Fisheries concurred with this determination and consultation for the Atlantic and shortnose sturgeon is complete (NOAA Fisheries, 2014a).

#### **4.7.1.2 Species under FWS Jurisdiction**

##### **Piping Plover**

The piping plover is a federally listed threatened species that is also state-listed as endangered in New York (NYSDEC, 2014c) and threatened in Massachusetts (MDFW, 2014a) and Connecticut (CTDEEP, 2014a). The piping plover is a shorebird found on coastal beaches in counties where AIM Project facilities are located, including Plymouth and Bristol Counties in Massachusetts and New Haven County, Connecticut (FWS, 2014a). The AIM Project facilities in these three counties are not located on or near any coastal beaches. As such, we conclude that the Project would have *no effect* on the piping plover. The FWS has concurred with this determination (FWS, 2014l).

##### **Roseate Tern**

The roseate tern is a federally listed endangered species and is also state-listed as endangered in New York, Massachusetts, and Connecticut (CTDEEP 2013a; FWS, 2014b; MDFW, 2014b; NYSDEC,

2014c). Like the piping plover, the roseate tern is a shorebird found on coastal beaches in counties where AIM Project facilities are located including Plymouth and Bristol Counties in Massachusetts and New Haven County, Connecticut. However, the facilities in these counties would not be located on or near any coastal beaches. Therefore, we conclude that the Project would have *no effect* on the roseate tern. The FWS has concurred with this determination (FWS, 2014l).

### **Puritan Tiger Beetle**

The puritan tiger beetle is a federally listed threatened species and Connecticut state-listed endangered species that has been documented within sandy beach habitats along the Connecticut River in the Town of Cromwell, Middlesex County, Connecticut (FWS, 2014c; CTDEEP, 2014b). The closest AIM Project facility to the Connecticut River is the Line-36A Loop Extension located in the Towns of Cromwell and Rocky Hill. The proposed facilities would not be located on sandy beach habitat on the shore of the Connecticut River. Therefore, we conclude that the Project would have *no effect* on the puritan tiger beetle. The FWS has concurred with this determination (FWS, 2014l).

### **Indiana Bat**

The Indiana bat is a federally listed endangered species and is also a state-listed endangered species in New York, Connecticut, and Massachusetts. During the winter months, from late October to April, Indiana bats hibernate in caves and abandoned mineshafts. Hibernation can begin as early as September and can extend to late May (NYSDEC, 2013a; Massachusetts Natural Heritage and Endangered Species Program [MNHESP], 2013a). The bats emerge in the spring and travel to summer roost sites and maternity colonies in wooded or semi-wooded habitats (FWS, 2004). Females give birth during this period, typically forming small colonies located in the crevices or under loose bark in large dead or living trees. Roost trees may be in upland areas or floodplain forests and occasionally in man-made structures, such as sheds or bridges (FWS, 2004). Large trees of species such as shagbark hickory and white oak are often preferred roost sites.

Indiana bats have the potential to occur in New York in Rockland, Westchester, and Putnam Counties, and in Connecticut in Fairfield and New Haven Counties. Project pipeline facilities in these counties include the Haverstraw to Stony Point, Stony Point to Yorktown, and the Southeast to MLV 19 Take-up and Relay segments. Aboveground facilities include the existing Stony Point and Southeast Compressor Stations and four existing M&R stations (Guilford, North Haven, Southbury, and Waterbury). The FWS identified a section of the Stony Point to Yorktown Take-up and Relay segment as having the potential to provide suitable summer habitat for the Indiana bat, due to the proximity of an active hibernaculum 12 miles away in Blooming Grove New York (FWS, 2013a). The FWS also indicated that Indiana bats have active hibernacula in New York and the potential to occur throughout the Project area (Algonquin, 2014a).

The FWS identified that wooded areas, open fields and lawns may provide suitable roosting and/or foraging habitat for Indiana bats (FWS, 2013a) and recommended presence/absence surveys if suitable habitat is present in the AIM Project area. If bats are present in suitable summer habitat, tree clearing could potentially kill, injure, or disturb breeding or roosting bats. Indiana bats could also be impacted by the loss of tree habitat or changes to other vegetation if significant amounts of clearing were to occur (FWS, 2013a). To determine if Indiana bats are present along the AIM Project rights-of-way and at aboveground facilities, Algonquin conducted acoustic surveys in areas identified as potential Indiana bat summer roosting habitat within the Project area between May 28 and June 19, 2014 (Algonquin, 2014l). These surveys were conducted in accordance with FWS established protocols (FWS, 2014d) and a study plan developed through consultation with the FWS (Algonquin, 2014c).

Algonquin submitted the results of the Indiana bat surveys directly to the FERC, FWS, and NYSDEC. The surveys found that no Indiana bats were detected in Connecticut, Massachusetts, or



Rhode Island. Indiana bats were detected at two locations in New York, including one location in Rockland County and another in Westchester County. To avoid direct impact on and incidental take of Indiana bats during the maternity season at these locations, Algonquin would adhere to the FWS-recommended tree clearing restriction window (April 1 to September 31) within a 5-mile radius of each identified bat location. Therefore, Algonquin would conduct all tree clearing within the 5-mile known bat habitat protection area between October 1 and March 31 when bats are in hibernation.

Based on Algonquin's 2014 survey results and implementation of the FWS-recommended tree clearing restriction window within the accepted home range of the species (5-mile radius), we have concluded that the Project *may affect but is not likely to adversely affect* the Indiana bat. The FWS has concurred with this determination (FWS, 2014l).

### **Bog Turtle**

The bog turtle is a federally listed threatened species that is also listed as endangered in New York, Connecticut, and Massachusetts (NYNHP, 2013b; NYSDEC, 2013e; CTDEEP, 2013b; MNHESP, 2013b). The species range is restricted to scattered populations in the eastern United States from western Massachusetts and New York south to North Carolina. Bog turtles hibernate through the winter in a muskrat lodge or burrow, emerging by around mid-April (NYSDEC, 2013e). Bog turtles live in habitats with cool, shallow, slow-moving water, soft muck soils, and tussock-forming herbaceous vegetation. Preferred habitats include wet meadows or open calcareous bogs dominated by sedges or sphagnum moss (NYSDEC, 2013e).

Based on initial information from the FWS and CTDEEP, bog turtles could be present in suitable wetlands along Algonquin's proposed Southeast to MLV 19 Take-up and Relay segment in Putnam County, New York and Fairfield County, Connecticut (Algonquin, 2014a; CTDEEP, 2013d). No potential habitat for bog turtles has been identified at Project facilities in Rhode Island or Massachusetts. Further consultation with the FWS identified historic occurrences of bog turtles in Danbury, Connecticut and known bog turtle habitat within 16 miles of the proposed Project pipeline facilities in New York (Algonquin, 2014a).

To address the potential occurrence of bog turtles in the Project area, Algonquin conducted Phase 1 surveys for the AIM Project facilities in New York, and the Southeast to MLV-19 Take-up and Relay segment and the Southeast Compressor Station in Connecticut during the spring of 2014. Based on Phase 1 survey results, and through consultation with the FWS, Algonquin conducted Phase 2 surveys for seven wetland sites that would be directly affected by the Project. Bog turtle surveys were conducted by a FWS-qualified bog turtle surveyor (FWS, 2013f) during March, April, and May 2014, corresponding with the prescribed spring/summer survey period (FWS, 2006). Algonquin submitted the results of the bog turtle surveys directly to the FERC, FWS, and NYSDEC. No bog turtles were detected during Phase 2 surveys.

For five wetland sites that contained potential habitat for bog turtles but would not be directly affected by the Project, Algonquin would implement site-specific conservation measures approved by the FWS. These conservation measures include:

- retaining a qualified bog turtle surveyor to clear the work area of any wildlife prior to the start of any earth moving activity;
- erecting a double layer of heavy duty silt fence delineating the work area within potential habitat;
- retaining a qualified bog turtle surveyor to inspect the work area each day prior to construction within the wetlands;

- contacting the FWS and ceasing work if a bog turtle is found; and
- avoiding blasting within the wetlands.

Based on the survey results and Algonquin's proposed commitment to implementing the conservation measures presented above, which the FWS considers adequate for avoiding adverse impacts on bog turtles, we conclude that the Project *may affect, but would not likely adversely affect* the bog turtle. The FWS has concurred with this determination (FWS, 2014l).

### **Northern Red-bellied Cooter**

Northern Red-bellied cooter is a federally endangered species that inhabits a small geographic range in Massachusetts (FWS, 2014e). The Middleborough M&R Station is located in the town of Middleborough in Plymouth County where historical records indicate that the northern red-bellied cooter may be present (FWS, 2013a).

Northern red-bellied cooters inhabited ponds, lakes, and other large waterbodies. During their active season they are almost exclusively found in open water habitats (MDFW, 2014c). Northern red-bellied cooters normally nest within 100 yards of their home waterbody, in exposed locations with minimal canopy coverage.

The existing Middleborough M&R Station would undergo modifications as part of the AIM Project. The existing station is surrounded by paved roadways, residential developments, and a closed canopy red-maple swamp. The nearest open waterbody is a small manmade pond located approximately 400 feet to the northwest of the existing station. There is no suitable foraging or nesting habitat for northern red-bellied cooters located within 200 feet of the existing station. All proposed modification work at the Middleborough M&R Station would take place within the existing fence line and developed portion of the site and would not disturb any vegetation as described in section 4.5.4.

Due to the absence of suitable habitat for the northern red-bellied cooter in the areas to be disturbed by the Project, we have determined that the Project would have *no effect* on the northern red-bellied cooter. The FWS has concurred with this determination (FWS, 2014l).

### **Small Whorled Pogonia**

Small whorled pogonia is a federally listed threatened species and a New York State-listed endangered species that has been historically recorded in Rockland County, New York (NYSDEC, 2010b; FWS, 2013a). The plant is a small orchid that grows in mature hardwood forests of beech, birch, maple, oak and hickory, preferring acidic soils with thick leaf litter (FWS, 2013b).

Algonquin consulted with the FWS regarding the potential for small whorled pogonia habitat to occur in the AIM Project area in Rockland County, New York and the need for field surveys (Algonquin, 2014a). During a meeting on March 20, 2014, the FWS identified six areas of concern in the Project area. To determine if the small whorled pogonia is present in the proposed construction work area within the six areas of concern, Algonquin conducted botanical surveys between July 1 and 3, 2014, which is a time when the small whorled pogonia is considered easily identifiable. No small whorled pogonia plants were observed during these surveys and only a few suitable microhabitats were observed. Based on our review of Algonquin's survey report that was filed with the FWS and FERC on July 10, 2014, we conclude that the Project would have *no effect* on the small whorled pogonia. The FWS has concurred with this determination (FWS, 2014l).

#### 4.7.1.3 Federal Candidate and Proposed Species

Although candidate and proposed species do not receive federal protection under the ESA, the FWS requested that the FERC consider the potential effects on northern long-eared bat and New England cottontail so that section 7 consultations could be facilitated in the event these species become listed before or during Project construction (FWS, 2013a, Algonquin, 2014a, Algonquin, 2014b).

##### **New England Cottontail**

New England cottontail is currently a candidate species for listing under the ESA (FWS, 2013c). The New England cottontail prefers early successional forests (e.g. thickets with thick and tangled vegetation) that are generally less than 25 years old.

Algonquin's existing pipeline rights-of-way are maintained in an early vegetative successional state, and may provide suitable shrub habitat for New England cottontails. Information on potential vegetation impacts and mitigation is provided in section 4.5.4. The FWS indicated that the New England cottontail is currently undergoing review for listing by the FWS and has the potential to be present near AIM Project facilities (Algonquin, 2014a). These facilities include the Stony Point to Yorktown Take-up and Relay segment in Westchester County, New York; the Southeast to MLV 19 Take-up and Relay segment in Putnam and Fairfield Counties, Connecticut; and the E-1 System Lateral Take-Up and Relay segment in Connecticut (Algonquin, 2014a). However, the FWS explained that the final rule and list status for New England Cottontail would not likely occur until after the AIM Project completed construction (FWS, 2014f; FWS, 2014g). As such, the FWS indicated that the New England cottontail was not an issue for the Project (FWS, 2014f). The FWS also reviewed photo documentation taken along Algonquin's right-of-way during bog turtle surveys in 2014 and concluded that the habitat in the proposed AIM Project area is not likely suitable for the New England cottontail (FWS, 2014g). Therefore, we conclude that the Project *would not contribute to a trend toward federal listing* of the New England cottontail. The FWS has concurred with this determination (FWS, 2014l).

##### **Northern Long-eared Bat**

The northern long-eared bat is currently proposed for federal listing as an endangered species (FWS, 2013d) and is also a state-listed endangered species in Massachusetts (MDFW, 2014d). The northern long-eared bat was not initially identified by the FWS as rare or a species of concern during consultation in 2013. However, due to rapid and profound declines in Northeast bat populations due to white-nose syndrome, the species was proposed for listing as endangered by the FWS in October 2013 and a final rule is anticipated in April 2015 (FWS, 2013a, 2014m).

During the summer, northern long-eared bats hunt and roost in forests, roosting in stands of dead hardwoods with large vertical cavities (FWS, 2014h; MDFW, 2014d). During the winter months, from late October to April this species returns to historic hibernacula sites. Suitable winter hibernacula for this species includes underground caves and cave-like structures (such as mines or railroad tunnels), typically with large passages and significant cracks and crevices for roosting. Northern long-eared bats typically occupy their summer habitat from early April through mid-September each year.

If northern long-eared bats are present, tree clearing could potentially kill, injure, or disturb breeding or roosting bats. Northern long-eared bats could also be affected by the loss of tree habitat if significant amounts of tree clearing were to occur. To determine if northern long-eared bats are present within the Project area, Algonquin conducted acoustic surveys in potential northern long-eared bat summer habitat, concurrent with the surveys for the Indiana bat, and consulted with the FWS for both bat species (see discussion for Indiana bat above). Specific to the northern long-eared bat, Algonquin used the Northern long-eared bat Interim Conference and Planning Guidance document (FWS, 2014i) to guide

identification of suitable summer habitat prior to implementing acoustic surveys, as recommended by the FWS.

Algonquin submitted the results of the northern long-eared bat surveys directly to the FERC, FWS, and NYSDEC. The surveys found that no northern long-eared bats were detected in Connecticut, Massachusetts, or Rhode Island. Northern long-eared bats were detected at one location in Westchester County, New York. To avoid direct and incidental take of northern long-eared bats during the maternity season at this location, Algonquin would adhere to the FWS-recommended tree clearing restriction window (April 1 to September 31) within the accepted home range of the species (3-mile radius). Therefore, Algonquin would conduct any required tree clearing for the Project within the 3-mile known bat habitat protection area between October 1 and March 31 when the bats are in hibernation.

Based on Algonquin's 2014 summer habitat survey results and implementation of the FWS-recommended tree clearing restriction window within the accepted home range of the species (3-mile radius), we have concluded that the Project would *not likely jeopardize the continued existence* of the northern long-eared bat. The FWS has concurred with this determination (FWS, 2014).

#### **4.7.2 Migratory Birds**

Migratory birds are species that nest in the United States during the summer and make short or long-distance migrations for the non-breeding season. Neotropical migrant birds migrate south to the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. Migratory birds are protected under the MBTA (16 USC 703-711). The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, or nests unless authorized under a FWS permit. Executive Order 13186 (66 Federal Register 3853) directs federal agencies to identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and to avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the FWS. Executive Order 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors, and that particular focus should be given to addressing population-level impacts.

On March 30, 2011, the FWS and the Commission entered into a MBTA MOU that focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening migratory bird conservation through enhanced collaboration between the two agencies. This voluntary MBTA MOU does not waive legal requirements under the MBTA, BGEPA, ESA, Federal Power Act, NGA, or any other statutes and does not authorize the take of migratory birds.

To assist in our review of the AIM Project, Algonquin provided the Commission with the FWS list of Birds of Conservation Concern (BCC) for the Bird Conservation Regions (BCR) where AIM Project facilities would be located, including the Appalachian Mountains (BCR 28) and New England/Mid-Atlantic Coast (BCR 30), as published by the FWS. In this list Algonquin also included the Atlantic Northern Forest BCR (14) as referenced by the FWS (FWS, 2013a). This table identifies 127 species occurring in BCRs 30 and 28 where AIM Project facilities would be located, including 89 species that breed in these BCRs. All of the migratory BCCs and other sensitive bird species that occur in BCRs 14, 28, and 30 are listed in table O-1 in appendix O. See section 4.7.1 for discussion of potential effects on migratory birds that are also federally listed as threatened or endangered.

The potential impact of the Project on migratory birds, including BCC-listed birds, would include the temporary and permanent loss of habitat associated with the removal of existing vegetation during construction (see section 4.5.4). Noise and other construction activities could potentially affect foraging and breeding activities of birds in nearby areas, or temporarily displace birds into adjacent habitats. Construction activities that occur during the nesting season for migratory birds (generally April 1 to August 31) could result in abandonment or destruction of nests and mortality of eggs and young birds that

have not yet fledged. Migratory birds could also be affected by operation and maintenance of the new facilities, which would permanently convert approximately 24.6 acres of upland forest to an herbaceous state. Potential effects would include a reduction in available forest habitat associated with the conversion of forested land to open land on the permanent right-of-way possibly resulting in increased competition, a potential increase in parasitic bird species, edge effects, and ongoing disturbances associated with periodic mowing and other right-of-way maintenance activities. The FWS expressed specific concern regarding impacts on forest-interior birds and their habitats due to fragmentation (FWS, 2013a).

The Haverstraw to Stony Point Take-up and Relay segment would run adjacent to and across a section of the Harriman and Sterling Forests IBA in Rockland County, New York (Audubon, 2014). About 15.3 acres of forested land would be affected by this segment. The Harriman and Sterling Forests IBA is a 63,800-acre area that is part of the Hudson Highlands (see section 4.6.1.2 for discussion of the Hudson Highlands). This IBA is 90 percent forest, including Appalachian oak-pine, deciduous wetland, evergreen northern hardwood, oak, and sugar maple mesic forests (Burger and Liner, 2005). This diverse, forested area supports a healthy representative breeding community of forest birds including state-listed species of concern including the sharp-shinned hawk, Coopers hawk, northern goshawk, red-shouldered hawk, golden-winged warbler, and cerulean warbler (Burger and Liner, 2005; NYSDEC, 2014c). Tree removal and construction associated disturbance in the area of the IBA could potentially harm or disturb these birds during their breeding season.

The Stony Point to Yorktown Take-up and Relay segment would involve 72.7 acres of tree clearing and diverges from Algonquin's existing rights-of-way where it would cross the Hudson River and the associated Lower Hudson River IBA in Rockland and Westchester Counties, New York (Audubon, 2014). The Lower Hudson River IBA is a 28,000-acre area that extends from just north of the Newburgh-beacon Bridge and south to, and including, Croton Point Park (Burger and Liner, 2005). This area also includes surrounding upland areas that are important winter roost sites for state-listed threatened bald eagle (NYSDEC, 2014c). The Lower Hudson River IBA is one of the most critical wintering bald eagle sites in New York and is becoming an important breeding area (Burger and Liner, 2005). In addition to bald eagles, Croton Park also supports wintering and breeding grassland birds including the state-listed endangered short-eared owl, threatened northern harrier and Henslow's sparrow, and special concern grassland sparrow and vesper sparrow (Burger and Liner, 2005; NYSDEC, 2014c). The proposed pipeline crossing of the Hudson River is approximately 6 miles north of Croton Point Park. As such, the Project would not disturb this park or the park's resident birds. Potential effects on bald eagles for the area of the Lower Hudson River IBA crossed by the Project are discussed in section 4.7.3.

Algonquin designed the Project to minimize potential impacts on migratory birds and interior forest bird species and would take other measures during Project construction and operation to limit migratory bird impacts. These measures include:

- routing Project facilities to avoid sensitive resources where possible;
- maximizing the use of existing pipeline and utility rights-of-way;
- limiting the construction and operation right-of-way widths to the minimum necessary;
- conducting mitigation for impacts on sensitive resources (e.g., wetlands and protected species) through agency permit conditions;
- adherence to the measures outlined in Algonquin's E&SCP during construction of the Project facilities; and
- limiting routine right-of-way maintenance clearing and prohibiting clearing during the migratory bird nesting season (April 15 to August 1).

In addition to the measures presented above, Algonquin would commit to conducting surveys prior to clearing along the 4.9-mile West Roxbury Lateral in Massachusetts. Excluding the proposed West Roxbury Lateral, 94 percent of the proposed pipeline facilities are located within existing pipeline corridors and other utility rights-of-way, minimizing fragmentation of interior forests to the maximum extent possible. Thus, tree-clearing activities would be limited in scope and spread over the entire Project area. We find that these measures would minimize the effects of the Project on BCCs and other migratory birds. On October 24, 2014, FERC consulted with the FWS and the FWS confirmed that Algonquin's proposed measures are sufficient for minimizing impacts on migratory birds (FWS, 2014).

#### **4.7.3 Bald Eagles**

Although the bald eagle was removed from the federal list of threatened and endangered species by the FWS on July 9, 2007 (FWS, 2007a), bald and golden eagles are still protected under the BGEPA (16 USC 668-668d), which prohibits the taking of eagles, their eggs, or their nests. Bald eagles are also state-listed as threatened in all states crossed by the Project. Bald eagles forage primarily for fish in large bodies of waters such as lakes, rivers, and coastal areas. Large nests are built near the tops of tall trees, or occasionally on cliffs, often overlooking open water (FWS, 2014j). During the summer, the eagle pairs defend territories that may include the active nest along with one or more alternate nests (FWS, 2007a). Wintering habitat consists of areas of ice-free open water with nearby foraging perches (FWS, 2014j).

According to information published by the FWS New York Field Office (FWS, 2013e) bald eagles occur in portions of Rockland and Westchester Counties in New York. As previously mentioned, the Lower Hudson River IBA located in these counties is an important wintering and breeding area for bald eagles in New York State (Burger and Liner, 2005; NYSDEC, 2014c) and the NYSDEC identified the area in and around the Hudson River as their main area of concern for the Project (NYSDEC, 2013b). Wintering roost locations occur in and around the proposed crossing location of the Stony Point to Yorktown Take-up and Relay including (but not strictly limited to) Bear Mountain, the Hudson River shoreline, Lake Meahagh, and Iona Island.

To assess and address potential Project impacts on bald eagles, the NYSDEC recommends adherence to the FWS' 2007 *National Bald Eagle Management Guidelines* (FWS, 2007b). The NYSDEC stated that, generally avoiding Project activities during the wintering period (December 1st to March 31st) is sufficient to avoid impacts on wintering bald eagles (Algonquin, 2014a). Also, the NYSDEC asked that any Project-related blasting be reviewed for potential impacts in areas indicated for bald eagle (i.e., in and around the Hudson River). A meeting between Algonquin and the FWS on January 23, 2014, addressed the potential for bald eagle nests to be present near the Hudson River crossing (Algonquin, 2014a). The FWS' primary concern was noise mitigation and proximity of work to active nesting sites.

Algonquin conducted bald eagle surveys for the Hudson River crossing area in March and April 2014 to assess winter roosting activity and to investigate the presence of bald eagle nests (Algonquin, 2014c). During the surveys conducted in March, adult and immature bald eagles were observed flying, foraging from ice flows, and perching along the shorelines and hillsides of the Hudson River. These eagles were not observed during the April survey and are considered wintering eagles. No bald eagle nests were observed in the Project area or within 1 mile of the Project; the largest buffer for protecting nests from potential disturbance is 0.5 mile for blasting activities as referenced in the FWS' 2007 *National Bald Eagle Management Guidelines*. The closest active nest to the Project is located more than 6,000 feet south of the proposed crossing location outside of any nest disturbance buffer.

On October 24, 2014, FERC consulted with the FWS and the FWS concluded that the Project would not result in harm to bald eagles (FWS, 2014). Algonquin continues to consult with the NYSDEC to discuss survey results and state-level concerns for bald eagles, and develop and implement any state-

level avoidance and mitigation measures, including timing restrictions, as necessary, to avoid impacts on bald eagles.

#### 4.7.4 Marine Mammals

Marine mammals are federally protected under the MMPA, which prohibits the taking of these species except under certain circumstances (NOAA, 2014a). Common marine mammals, such as harbor seals (*Phoca vitulina*), are found in the New York Bight. Federally listed species including cetacean species, such as humpback whale (*Megaptera novaeangliae*), have been reported at times in New York Harbor (FWS, 1997) and are theoretically possible within deeper portions of the Hudson River estuary. The Harbor porpoise (*Phocoena phocoena*) is listed as a species of special concern in New York and has historically been an occasional visitor (FWS, 1997) in the Hudson River estuary. Records of any cetaceans in the estuary are rare and generally thought to represent individuals that are unhealthy or lost (FWS, 1997).

We have reviewed the information provided by Algonquin, conducted our own research, and consulted with NOAA Fisheries. Through consultation with NOAA Fisheries, we have concluded that the Project would have *no effect* on marine mammals because they are not anticipated to occur within the Project area of the Hudson River. Additionally, Algonquin would also cross the Hudson River using the HDD method with no associated in-water work proposed. Since no in-water work would occur, the Project would avoid impacts on any rare marine mammals present in the Hudson River during construction. NOAA Fisheries concurred with this determination and consultation regarding marine mammals is complete (NOAA Fisheries, 2014a).

#### 4.7.5 State-listed Species

New York, Connecticut, Rhode Island, and Massachusetts have all passed laws to protect state-listed species. The overall goal of each of the state endangered species laws is to conserve, protect, restore, and enhance any threatened or endangered species and their essential habitat. The state-specific regulations are as follows:

- the New York ESA (New York Environmental Conservation Law § 11-0535 and 6 New York Code of Rules and Regulations [NYCRR] Part 182);
- the Connecticut ESA (Connecticut General Statutes Chapter 495);
- the Rhode Island ESA (Rhode Island Title 20. Fish and Wildlife. Chapter 37. Endangered Species of Animals and Plants); and
- the Massachusetts ESA (Massachusetts General Law section 131A).

To determine if state-listed species or their habitats are known or have the potential to occur within the AIM Project area, Algonquin consulted with the NYNHP, NYSDEC, CTDEEP, Connecticut Natural Diversity Data Base, RIDEM, Rhode Island Natural Heritage Program, MDFW, and MNHESP.

Through consultation with the state agencies, 29 state-listed threatened, endangered, or special concern species were identified as potentially occurring in the New York and Connecticut sections of the Project area. Eight species are also afforded federal protection including seven federally listed threatened and endangered species discussed above in section 4.7.1 and the bald eagle discussed above in section 4.7.3. No state-listed species were identified as a concern for the Project in Rhode Island and Massachusetts. A discussion of agency consultation, survey results, and proposed mitigation for the remaining 21 species potentially occurring in the Project area are provided below and summarized in table 4.7.5-1.

TABLE 4.7.5-1

## State-Listed Species Potentially Occurring Within the Vicinity of the AIM Project

Species	State Status <sup>a</sup>	Habitat	Project Component	Field Survey Results	Seasonal Timing Restrictions and Proposed Mitigation
<b>New York</b>					
Least bittern ( <i>Ixobrychus exilis</i> )	T	Fresh or brackish emergent marsh and/or shallow pond habitats	None. No records within 0.5 mile of AIM Project facilities	None	None; no effect
Timber rattlesnake ( <i>Crotalus horridus</i> )	T	Deciduous forests in rugged terrain	Stony Point to Yorktown Take-up and Relay, Rockland County	No habitat identified in workspace; habitat identified adjacent to Algonquin's existing rights-of-way	Pending consultation; survey sweeps; on-site monitor; temporary barriers; and education of construction staff
<b>Connecticut</b>					
American bittern ( <i>Botaurus lentiginosus</i> )	E	Freshwater wetlands and occasionally coastal salt marshes	Pomfret M&R Station	None	None; no effect
American kestrel ( <i>Falco sparverius</i> )	T	Open habitats with nesting cavities and hunting perches	Pomfret M&R Station	None	None; no effect
Pied-billed grebe ( <i>Podilymbus podiceps</i> )	E	Freshwater to brackish seasonal and permanent ponds with dense stands of deep water emergent vegetation	Pomfret M&R Station	None	None; no effect
Savannah Sparrow ( <i>Passerculus sandwichensis</i> )	SC	Open areas with low vegetation, including most of northern North America, from tundra to grassland, marsh, and farmland	Pomfret M&R Station	None	None; no effect
Red bat ( <i>Lasiurus borealis</i> )	SC	Deciduous forest habitat	Pomfret M&R Station	None	None; no effect
Eastern cougar ( <i>Puma concolor cougar</i> )	SC	Presumed to be extirpated	None; presumed extirpated	None	Will report to CTDEEP if observed and avoid disturbing the animal; no effect



TABLE 4.7.5-1 (cont'd)

## State-Listed Species Potentially Occurring Within the Vicinity of the AIM Project

Species	State Status <sup>a</sup>	Habitat	Project Component	Field Survey Results	Seasonal Timing Restrictions and Proposed Mitigation
Eastern box turtle ( <i>Terrapene carolina carolina</i> )	SC	Deciduous woodlands and overgrown old fields where turtles have ample cover and sunlight and wetlands	Line-36A Loop Extension, Cromwell Compressor Station, Middletown M&R Station, and North Haven M&R Station	None	Fencing workspace for aboveground facilities; daily sweeps and relocations, if necessary; education of construction staff; no vehicles parked or equipment housed within the areas of potential eastern box turtle presence; special care to not harm turtles when working in early morning or evening; removal of silt fence and stabilization of soils post construction
Eastern hognose snake ( <i>Heterodon platirhinos</i> )	SC	Open, sandy woodlands and extensive glacial sand deposits	E-1 System Lateral Take-up and Relay	None	Surveys prior to and during clearing and grading activities; periodic inspections of the work area after the clearing and grading; education of construction staff
Ground beetle ( <i>Scaphinotus viduus</i> )	SC	Older growth mature floodplain forests	Line-36A Loop Extension, Cromwell Compressor Station, and Middletown M&R Station	None	None; no effect
Pine barrens tiger beetle ( <i>Cicindela formosa generosa</i> )	SC	Blowouts and sand plains of dry - xeric, loose shifting sand, without water and that are sparsely vegetated, such as pine barrens	Line-36A Loop Extension	None	Avoid staging equipment and materials in the sand quarry located at the western end of the Line-36A Loop Extension
Jefferson salamander 'complex' ( <i>Ambystoma jeffersonianum</i> )	SC	Breeds in vernal pools and requires extensive tracts of forest surrounding these pools to survive	Southeast to MLV 19 Take-up and Relay	One vernal pool is located outside of the temporary workspace for the Project	Fencing and signage along the edge of the temporary workspace; monitoring by an EI
Climbing fern ( <i>Lygodium palmatum</i> )	SC	Grows in moist, open woods or thickets with acidic soil	Line-36A Loop Extension and Cromwell Compressor Station	Plants identified east of the Cromwell Compressor Station and just outside of the Project workspace	Fencing and signage both monitored by EI and repaired, if necessary

TABLE 4.7.5-1 (cont'd)

## State-Listed Species Potentially Occurring Within the Vicinity of the AIM Project

Species	State Status <sup>a</sup>	Habitat	Project Component	Field Survey Results	Seasonal Timing Restrictions and Proposed Mitigation
Collins' sedge ( <i>Carex collinsii</i> )	SC	Presumed to be extirpated	Line-36A Loop Extension and Cromwell Compressor Station	No plants identified	None; no effect
Field paspalum ( <i>Paspalum laeve</i> )	E	Perennial grass found in damp meadows, fields, mowed roadsides, mowed grounds, and lawns	Line-36A Loop Extension and Cromwell Compressor Station	No plants identified; CTDEEP reported known locations in proximity to climbing fern locations identified by Algonquin, as described above	Fencing and signage both monitored by EI and repaired, if necessary
Hard-stemmed bulrush ( <i>Schoenoplectus acutus</i> )	T	Grows in wetlands, and can be found in the shallow water along the edges of lakes or ponds	Southeast to MLV 19 Take-up and Relay	No plants identified	None; no effect
Three-leaved false Solomon's seal ( <i>Maianthemum trifolium</i> )	T	Found in cool bogs and wetlands with peat soils	Line-36A Loop Extension and Cromwell Compressor Station	No plants identified	None; no effect
Threadfoot ( <i>Podostemum ceratophyllum</i> )	SC	Found on rocks in rapids, fast-moving streams, headwater streams and other high-energy stream systems	E-1 System Lateral Take-up and Relay	No plants identified	None; no effect
Twinline ( <i>Linnaea borealis</i> spp. <i>Americana</i> )	E	Inhabits cool wetlands and swamps	Line-36A Loop Extension and Cromwell Compressor Station	No plants identified	None; no effect
Yellow fringed orchid ( <i>Platanthera ciliaris</i> )	T	Inhabits open mat of Sphagnum bogs	Line-36A Loop Extension and Cromwell Compressor Station	No plants identified	None; no effect
<sup>a</sup> (E) Endangered; (T) Threatened; (SC) Special Concern					

In general, impacts on state-listed species would typically be similar to those described for other plant and animal species in sections 4.5 and 4.6. Species-specific discussions of potential Project impacts for each state are presented below.

#### **4.7.5.1 New York**

In addition to the federally listed species discussed in section 4.7.1 and the bald eagle discussed in section 4.7.3, the following is a discussion of state-listed species that may occur near AIM Project facilities in New York (NYSDEC, 2013b).

##### **Least Bittern**

The least bittern is a state threatened species that typically inhabits fresh or brackish emergent marsh and/or shallow pond habitats (NYNHP, 2013f). Least bitterns have been documented in Rockland and Westchester Counties. The NYSDEC reviewed the Project and reported that there were no records of least bittern within 0.5 mile of the proposed facilities and, as such, they have no concerns related to this species (NYSDEC, 2013b). We conclude that the least bittern would not be affected by the Project.

##### **Timber Rattlesnake**

The Timber rattlesnake is a state-listed threatened species that inhabits deciduous forests in rugged terrain. According to the NYSDEC, timber rattlesnakes are known to occur along the Stony Point to Yorktown Take-up and Relay segment from approximately MPs 0.7 (Franck Road) to 2.9 (Route 202/9W) in the Town of Stony Point (NYSDEC, 2013b). The NYSDEC's primary concerns are the Franck Road TAR installation (TAR-1.1), possible laydown yards, and the proposed timing of grading activities. Impacts on the timber rattlesnake could include alteration of forested habitat and direct impacts including mortality if individuals are struck by construction vehicles or if occupied dens are crushed or excavated.

The NYSDEC requested Algonquin assess the construction work areas in Rockland County for potential habitat (NYSDEC, 2014c). To identify potential existing habitat in construction work areas in Rockland County, Algonquin conducted timber rattlesnake habitat assessment surveys on May 15, 2014 using a qualified biologist. No suitable open rock habitat was identified along Algonquin's existing rights-of-way and no natural open and rocky basking or gestating areas were observed in the proposed Project workspace. Therefore, the Project would not impact any existing basking or gestating habitat. However, two sections of Algonquin's right-of-way parallel electrical transmission line rights-of-way where abundant rock cover and potential basking and gestating habitat were observed. One of these areas is located within 1.5 miles of known timber rattlesnake dens, and rattlesnakes could potentially bask along the northern edge of Algonquin's existing rights-of-way. Timber rattlesnakes from these areas could also occur within the Project area while transiting or foraging.

The NYSDEC provided a list of potential BMPs that may be used to avoid or minimize Project-related impacts on timber rattlesnakes, but noted that not all the methods are appropriate for all projects, and should be considered where appropriate (NYSDEC, 2013b). These BMPs are listed below.

##### **Seasonal Restrictions**

All allowable disturbance activities, including movement of construction vehicles, excavation, and alteration of vegetation, should be conducted during the period when the snakes would be expected to be hibernating and are less likely to be directly impacted by aboveground disturbances. This acceptable work period is November 1 through March 31.

Habitat management (including timber harvesting) and trail maintenance activities should also be timed to minimize the potential for injury/death to snakes. Habitats that are actively managed (e.g. mowing and prescribed burning) and trail edges that are cleared using a brush hog may increase mortality as snakes are killed by machinery or incinerated by fire.

In addition to the seasonal restrictions applied to all vegetation management practices, disturbance to non-transient habitats should be avoided at all times. Roads, skid trails, and landings should be kept within at least 330 feet from all known or potentially suitable basking and gestating habitats, and to minimize the potential for collapse or disturbance of dens, heavy equipment and site preparation work (e.g., disk-harrowing, shearing, root raking) should be prohibited within 660 feet of any known hibernacula.

#### Timber Rattlesnake Monitor

If any Project-related work is to occur (in whole or in part) during April 1 through October 31, the project sponsor should retain the services of a snake monitor. The snake monitor must be a qualified biologist that has knowledge of timber rattlesnake ecology and relocation procedures. The monitor should be on site during all construction activities and would be responsible for: 1) conducting reconnaissance surveys for timber rattlesnakes within the work area prior to the initiation of any disturbance activities, and 2) relocating snakes as required.

#### Temporary Barrier

When disturbance is likely to occur from actions occurring outside of the acceptable work period, a temporary restrictive barrier may help to avoid impacts if installed around the perimeter of the disturbance footprint of small projects (less than 1 acre). The barrier should be:

1. installed before the end of the acceptable work period and maintained until the end of the construction phase of the Project or until the beginning of the next acceptable work period, whichever occurs first;
2. inspected daily and, if necessary, repaired immediately to a fully functional condition; and
3. constructed in accordance with NYSDEC-approved design specifications.

The effectiveness of the barrier is diminished and snakes may be able to gain access to the disturbance area if debris (e.g., tree limbs, soil) is allowed to overtop or pile up alongside the barrier.

#### Education

The NYSDEC reports that persecution by humans is a significant source of timber rattlesnake mortality and is thought to be a major contributing factor to the population decline experienced by the species over the past 100 years. Misconceptions about the actual versus perceived threat posed by timber rattlesnakes often leads to the snakes being injured or killed by humans who, when encountering a timber rattlesnake, are fearful of being attacked. Given this, the NYSDEC supports efforts to educate residents located near known den sites to help identify timber rattlesnakes and accurately describe the snakes' non-aggressive behavior.

## Summary and Conclusion for the Timber Rattlesnake

Given the complex construction schedule that includes pipeline outages, Algonquin would not be able to adhere to the NYSDEC's recommended seasonal restrictions for timber rattlesnakes. Therefore, Algonquin would, at a minimum, implement the following measures to minimize potential impacts on timber rattlesnakes during construction.

- Algonquin would conduct preconstruction survey sweeps of the Stony Point to Yorktown Take-up and Relay segment, with particular emphasis on the pipeline segment from approximately MPs 0.7 to 2.9 using an experienced, New York-licensed rattlesnake monitor.
- The monitor would be on site during all construction related activities, would conduct reconnaissance surveys for timber rattlesnakes prior to the initiation of any disturbance activities, and relocate any rattlesnakes encountered.
- Temporary barriers would be used when applicable, likely to isolate equipment storage yards.
- Construction staff would be educated about the presence of timber rattlesnakes, and provided with contact numbers to call if a timber rattlesnake is encountered.

Algonquin continues to consult with the NYSDEC to discuss the results of the timber rattlesnake habitat assessment survey and determine the appropriate conservation measures to address the potential occurrence of timber rattlesnakes in the Project area and their habitat adjacent to Algonquin's right-of-way. Because consultation regarding the timber rattlesnake is not complete, **we recommend that:**

- **Prior to construction in New York, Algonquin should file with the Secretary all permit requirements and avoidance or mitigation measures developed for the timber rattlesnakes in consultation with the NYSDEC, and documentation of its correspondence with the NYSDEC regarding the proposed measures.**

### **4.7.5.2 Connecticut**

In addition to the federally listed species discussed in section 4.7.1, the CTDEEP has identified the potential for the presence of state-listed species near AIM Project facilities (CTDEEP, 2013d). Algonquin is in the process of preparing a conservation plan that discusses each of the species identified by the CTDEEP, addresses potential impacts and, if necessary, avoidance, minimization, and mitigation measures. The CTDEEP provided comments to FERC on the draft EIS, which identified their concerns for Connecticut state-listed species. Algonquin has agreed to implement the CTDEEP species-specific recommended measures as outlined in their comments; their commitments to the measures are included in this section.

### **State-listed Wildlife Species in Connecticut**

#### American Bittern

The American bittern is listed as a state endangered species (CTDEEP, 2013b) and is found in interior freshwater wetlands. The American bittern has been documented in Windham County (CTDEEP, 2013d), which is where Algonquin's existing Pomfret M&R Station is located. No habitat for American bittern occurs near the M&R station site and none would be affected by the proposed station modifications, which would take place within the existing fence line of the Pomfret M&R Station site. Based on the absence of suitable habitat, the Project would not affect this species.

### American Kestrel

The American kestrel is listed as a state threatened species (CTDEEP, 2013b), which is found in open grassy or shrubby areas with short vegetation in which to hunt for their prey. In Connecticut, American kestrels are usually observed near open roadsides and agricultural areas, airports, large parks, and power line rights-of-way. American kestrels also occur in urban and suburban areas and will use manmade structures (e.g. buildings, barns, silos, cornices, etc.) for nest sites.

American kestrels have been documented in Windham County (CTDEEP, 2013d) where Algonquin's existing Pomfret M&R Station is located. While potential habitat for the American kestrel occurs near this site, the proposed station modifications would take place within the existing fence line of the Pomfret M&R Station site. We have concluded the Project would not significantly affect this species.

### Pied-billed Grebe

The pied-billed grebe is listed as a state endangered species (CTDEEP, 2013b). Pied-billed grebes breed on freshwater to brackish seasonal and permanent ponds and require dense stands of deep water emergent vegetation (e.g. cattails) for nesting and cover that are situated close to open water for foraging (CTDEEP, 2013i; NYSDEC, 2013g).

Pied-billed grebes have been documented in Windham County (CTDEEP, 2013d). Algonquin's existing Pomfret M&R Station is located within this county; however, habitat for the pied-billed grebe does not occur near this site. The proposed station modifications would take place within the existing fence line of the Pomfret M&R Station site. Based on the absence of suitable habitat, the Project would not affect the pied-billed grebe.

### Savannah Sparrow

The savannah sparrow is listed as a state species of special concern (CTDEEP, 2013b). Savannah sparrows breed in open areas with low vegetation (Cornell Lab of Ornithology, 2013). Savannah sparrows have been documented in Windham County (CTDEEP, 2013d) where Algonquin's existing Pomfret M&R Station is located. While potential habitat for the savannah sparrow occurs near this site, the proposed station modifications would take place within the existing fence line of the Pomfret M&R Station site and land disturbance would be minimal. We have concluded the Project would not affect this species.

### Red Bat

The red bat is listed as a state species of special concern (CTDEEP, 2013b). Red bats are typically forest dwellers, and generally prefer a deciduous forest biome. During the day it roosts in trees, often roosting in dense foliage or occasionally moss (CTDEEP, 2013j; University of Connecticut, 2013).

Red bats have been documented in Windham County (CTDEEP, 2013d) where Algonquin's existing Pomfret M&R Station is located. While potential habitat for the red bat occurs near this site, the proposed station modifications would take place within the existing fence line of the Pomfret M&R Station site and land disturbance would be minimal. We have concluded the Project would not affect this species.

### Eastern Cougar

The eastern cougar is listed as a state species of special concern and is presumed to be extirpated from Connecticut (CTDEEP, 2013b, 2013d). Eastern cougars utilize a wide range of habitats including tidal marshes, deserts, mountainous terrain, and deciduous, coniferous, and tropical forests (NYSDEC, 2013f).

Given that eastern cougars are presumed extirpated from the state, the Project would not affect this species. Should an unexpected eastern cougar be observed during construction of the AIM Project facilities in Connecticut, Algonquin would notify the CTDEEP and ensure the animal not be disturbed by construction activity.

#### Eastern Box Turtle

The eastern box turtle is listed as a special concern species in Connecticut (CTDEEP, 2013b, 2013e). This terrestrial turtle is found in a variety of habitats, including woodlands, field edges, thickets, marshes, bogs, and stream banks, but typically prefer well-drained forest bottomlands and open deciduous forests. They will use wetland areas at various times during the season. Eastern box turtles overwinter in low-lying wooded wetlands where they burrow into the forest floor to hibernate.

The CTDEEP identified the eastern box turtle as having the potential to occur along the Line-36A Loop Extension, the existing Cromwell Compressor Station, the existing Middletown M&R Station, and the North Haven M&R Station (CTDEEP, 2013d). The site descriptions for each of these facilities are provided below:

- The North Haven M&R Station property in North Haven, Connecticut consists of a paved yard and gravel lot surrounded by a chain-link fence. The station is bordered on the northern side by a forested wetland community. The proposed upgrades to the facility and the temporary workspace would all occur within the existing fenced metering station.
- The Middletown M&R Station property in Middlesex, Connecticut is maintained as a mowed lawn, with a gravel pad inside a high chain-link fence surrounding the existing facility. The station is bordered on the southern side by a deciduous upland forest community. No wetlands were found within 100 feet of the M&R station property. The proposed upgrades to this facility are to occur within the existing fenced M&R station, with ATWS situated on the surrounding lawn to be used for equipment staging and vehicle parking.
- The Line-36A Loop Extension is a 2-mile-long segment of existing pipeline right-of-way that crosses four wetland communities. These wetlands, and their adjacent uplands, have the potential to provide suitable habitat for eastern box turtles.
- The existing Cromwell Compressor Station site is located along the eastern end of the Cromwell Line-36A Loop and shares the same upland and wetland communities as the pipeline segment right-of-way.

The CTDEEP recommended that work to be conducted in box turtle habitat occur during the winter dormancy period of October through March, if possible (CTDEEP, 2013d). For the facilities where this timetable could not be met, and work would be conducted when box turtles are active, Algonquin would implement, as applicable, the following conservation measures recommended by the CTDEEP (CTDEEP, 2013d, 2013e):

- Silt fencing would be installed around the work area prior to construction.
- After silt fencing is installed and prior to construction, a sweep of the work area would be conducted to look for turtles.
- Workers would be apprised of the possible presence of turtles, and provided a description of the species.

- Any turtles that are discovered would be moved, unharmed, to an area immediately outside of the fenced area, and positioned in the same direction that it was walking.
- No vehicles or heavy machinery would be parked in any turtle habitat.
- Work conducted during early morning and evening hours would occur with special care not to harm basking or foraging individuals.
- All silt fencing would be removed after work is completed and soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.

Algonquin's proposed construction schedule for the Line-36A Loop Extension, Cromwell Compressor Station, existing Middletown M&R Station, and North Haven M&R Station all extend through the box turtle's active period from April to October 2015. As requested by the CTDEEP, Algonquin would implement all of the conservation measures listed above for conducting work during the eastern box turtle's active season at the aboveground facilities (the Cromwell Compressor Station, existing Middletown M&R Station, and North Haven M&R Station).

Due to the linear nature of the Line 36-A Loop Extension, and constant advancement of crews down the pipeline right-of-way, turtle exclusion barriers (e.g. silt fencing) are not practical in this application. As requested by the CTDEEP, to minimize possible impacts on box turtles during construction of the Line 36-A Loop Extension, Algonquin would implement all conservation measures listed above, with exception of silt fencing, for conducting work during the eastern box turtle's active season.

Based on implementation of the protective measures for aboveground facilities and the Line 36-A Loop Extension, we have concluded that the Project would not significantly affect the eastern box turtle.

#### Eastern Hognose Snake

The eastern hognose snake is listed as a state species of special concern (CTDEEP, 2013b). The eastern hognose snake's center of distribution in Connecticut is the extensive glacial sand and gravel deposits that span the central portions of the eastern and western hills (CTDEEP, 2013l). According to the CTDEEP, the eastern hognose snake has the potential to occur along the E-1 System Lateral Take-up and Relay segment in New London County (CTDEEP, 2013d).

To minimize possible impacts on eastern hognose snakes along the E-1 System Lateral Take-up and Relay segment, Algonquin would retain the services of a qualified biologist to conduct surveys of the Project area during clearing and grading activities, and conduct periodic inspections of the work area after the clearing and grading construction phases. Additionally, construction staff working at this facility would be provided with a description and photos of the species, along with contact numbers to call if a hognose snake is encountered. In comments provided by the CTDEEP to FERC on the draft EIS, the CTDEEP only requested education of work crews for the E-1 System Lateral Take-up and Relay segment to minimize the potential for inadvertent mortalities prior to construction. Based on implementation of these protective measures, we have concluded that the Project would not significantly affect the eastern hognose snake.

#### Ground Beetle

The ground beetle (*Scaphinotus viduus*) is listed as a state species of special concern. It occurs in older growth mature floodplain forests where it is most often found under rocks, logs, leaf piles, and other decaying organic debris.



According to the CTDEEP, ground beetles have the potential to occur along the Line-36A Loop Extension segment and near the existing Cromwell Compressor Station and existing Middletown M&R Station located in Middlesex County (CTDEEP, 2013d). Because no suitable old growth floodplain forests occur within the Project area, we have concluded that the Project would not affect this species.

#### Pine Barrens Tiger Beetle

The pine barrens tiger beetle is listed as a state species of special concern (CTDEEP, 2013b) that occupies sparsely vegetated blowouts and sand plains of dry-xeric, loose shifting sand. The pine barrens tiger beetle has the potential to occur along the Line-36A Loop Extension in Middlesex County (CTDEEP, 2013d). While no pine barrens or similar habitats occur near this pipeline segment, an old sand quarry is located adjacent to the westernmost 2,500 feet of pipeline corridor. In comments on the draft EIS provided by the CTDEEP, sightings of the pine barren tiger beetle at this location have occurred as recently as 2013. As recommended by the CTDEEP to protect the pine barrens tiger beetle, Algonquin would avoid staging any equipment or materials in the sand quarry. Based on implementation of these protective measures, we have concluded that the Project would not significantly affect the pine barrens tiger beetle.

#### Jefferson Salamander “Complex”

Jefferson salamander “complex” is listed as a state species of special concern (CTDEEP, 2013b). It occurs west of the Connecticut River where it is localized in the upland areas of Litchfield County and northern Fairfield County. This salamander is very sensitive to habitat disturbance and fragmentation and is undergoing a range-wide decline. It breeds in vernal pools and requires extensive tracts of forest surrounding these pools to survive. Populations in Fairfield, New Haven, and Hartford Counties have been severely reduced and stressed by habitat fragmentation (CTDEEP, 2013m).

Jefferson salamander “complex” has the potential to occur along the Southeast to MLV 19 Take-up and Relay segment and near the existing West Danbury M&R Station site in Fairfield County (CTDEEP, 2013d). No impacts on Jefferson salamander “complex” or its habitat are anticipated as a result of the proposed modification work that would take place within the existing fence line of the West Danbury M&R Station site. Algonquin conducted vernal pool surveys in April 2013 and identified one vernal pool along the Southeast to MLV 19 Take-up and Relay segment. This feature is on the edge of the temporary workspace and would not be disturbed during construction. As requested by the CTDEEP to prevent intrusion of impacts on potential Jefferson salamander “complex” habitat, Algonquin would install silt fencing and signage along the edge of the temporary workspace adjacent to the vernal pool, and have the area monitored by an on-site EI to prevent intrusion of impacts on the vernal pool. Based on implementation of these protective measures, we have concluded that the Project would not significantly affect Jefferson salamander “complex.”

#### **State-listed Plant Species in Connecticut**

The CTDEEP identified eight plant species of concern with the potential to occur within the area of impact of four separate proposed Project facilities (CTDEEP, 2013d). These four facilities and the potential rare plant species can be grouped into three distinct areas: the Cromwell facilities (consisting of the Cromwell Compressor Station and associated Line-36A Loop Extension), the Southeast to MLV-19 Take-up and Relay, and the E-1 System lateral Take-up and Relay.

Six state-listed species could potentially be found within the area that would be impacted by the Cromwell facilities: climbing fern, Collin’s sedge, field paspalum, twinflower, three-leaved false Solomon’s seal, and yellow-fringed orchid (CTDEEP, 2013d). All six of these species display readily identifiable flowers or fruiting bodies during the month of July. In order to determine whether any of these six species are present in the Project area, Algonquin conducted botanical surveys of the Cromwell

facilities in early August 2014 using a qualified botanist. The surveys targeted both upland and wetland areas of the Cromwell facilities.

Algonquin submitted the results of the botanical surveys to the CTDEEP on August 9, 2014. As described in the CTDEEP's comments on the draft EIS, the only state-listed plant identified during these surveys was the climbing fern, which was located at a site immediately east of the Cromwell Compressor Station and just outside of the construction area. To avoid affecting this state-listed plant, Algonquin would install protective fencing and signage at the climbing fern location and ensure diligence by an EI to repair or replace the fencing and signage should they be damaged. These mitigation measures have been approved by the CTDEEP.

In addition to the climbing fern, the CTDEEP indicated in their comments on the draft EIS that the field paspalum has been identified in the immediate area of the climbing fern locations identified by Algonquin, with reports as recent as 2001. The CTDEEP explained that the plant is found coincident with or immediately east of the climbing fern population location, south of the pipeline right-of-way. As requested by the CTDEEP, to prevent possible incursion into the field paspalum area, Algonquin would also install protective fencing and signage along the south side of the right-of-way and extend it 200 feet further east from the climbing fern occurrence.

Species-specific information regarding each of the eight state-listed plant species is listed below.

#### Climbing Fern

Climbing fern is listed as a state species of special concern (CTDEEP, 2013b). It is an evergreen, ivy-like plant that sprawls over the ground or climbs clockwise short distances up shrubs and low herbs. Climbing fern grows in moist pine-oak-maple woodlands with an open understory, in moist thickets, and along stream margins. Regenerating woodlands and right-of-way corridors also provide habitat for this species (MDFW, 2013a).

#### Collins' Sedge

Collins' Sedge is listed as a state species of special concern and is presumed to be extirpated (CTDEEP, 2013b). It is a perennial grass-like plant that is most recognizable when fruiting in summer (PNHP, 2013b). The species grows in sphagnum moss in acidic swamps and wet woods, often where conifers are a prominent part of the canopy (PNHP, 2013b).

#### Field Paspalum

Field Paspalum is listed as a state endangered species (CTDEEP, 2013b; NYNHP, 2013c). It is a perennial grass growing from short rhizomes. Fruit is present from Late July through September (NYNHP, 2013g). Field Paspalum is found in damp meadows, fields, mowed roadsides, mowed grounds, and lawns (NYNHP, 2013g).

#### Hard-stemmed Bulrush

Hard-stemmed bulrush is listed as a state threatened species (CTDEEP, 2013b). It is an erect grass-like perennial that grows from a spreading rhizome: the firm, rounded stems can reach a height of 10 feet or more within a single growing season. The flower can be found in spikelets that are held in small, branched clusters and fruiting from June to August. Hard-stemmed bulrush grows in wetlands and in the shallow water along the edges of lakes or ponds (PNHP, 2013a).

### Three-leaved False Solomon's Seal

Three-leaved false Solomon's seal is a state listed threatened species (CTDEEP, 2013b). It is an herbaceous plant, with alternate, oblong-lanceolate leaves and flowers that display six white petals (USDA, 2013a). The flower cluster is a terminal panicle of 20 to 80 small white flowers which appear in July through August, and then develop into red or white berries dotted with purple (Washington State University, 2014). It is found in cool bogs and wetlands with peat soils.

### Threadfoot

Threadfoot is listed as a state species of special concern (CTDEEP, 2013f). It is an olive-green, aquatic plant of firm texture that grows in streams and rivers while attached to rocks. It resembles seaweed, alga, or moss and attaches to rocks by fleshy disks. The stems are often branched and the leaves are very narrow and divided into numerous linear lobes. The flowers are small, not showy, and scattered along the stems. Flowers and/or fruits are present from mid-June through early October. Threadfoot grows submerged, to seasonally exposed, on cobbles and bedrock substrate in fast flowing, relatively large streams or rivers. Since this species often grows submerged in rapids and fast moving water it can be difficult to spot. Therefore, the best time to survey for this species is between mid-June and early October and when water levels are low (NYNHP 2013f).

### Twinflower

Twinflower is listed as a state endangered species (CTDEEP, 2013b). Twinflower is a small, herbaceous species with basal leaves characterized by a pair of small pink nodding flowers at the top of a slender, hairy stem. The pink to white bell-like flowers are nodding and are born in pairs on short, thin Y-shaped stalks, seldom exceeding six inches in height, hence the common name "twinflower." Throughout its range twinflower is commonly found under moderate deciduous canopy in either moist soil or average moisture conditions (USFS, 2014). In Connecticut, it inhabits cool wetlands and swamps (USDA, 2013b).

### Yellow Fringed Orchid

Yellow fringed orchid is listed as a state threatened species (CTDEEP, 2013b). It is a relatively stout, robust orchid with leafy shoots and basal leaves that terminate with a long, pointed tip. The stem is terminated by a densely flowered raceme of strikingly orange to yellow-orange flowers, each flower with an unlobed, prominently fringed lower lip. Yellow fringed orchid blooms primarily from late July through August (Washington State University, 2014, Michigan Natural Features Inventory 2009). It inhabits open mats of sphagnum bogs where its associates include pitcher plant, beak rush, cranberry, sedges, larch and other plants of acid peat bogs. This orchid also occurs in damp sandy meadows or in acid soils adjacent to marshes (Michigan Natural Features Inventory, 2009).

### **Summary and Conclusion for State-listed Species in Connecticut**

Based on the information provided by Algonquin and comments provided to FERC from the CTDEEP on the draft EIS, we conclude that the Project would not affect Connecticut state-listed plants because Algonquin would implement protective measures for species identified near the Project area, including the climbing fern and field paspalum. Based on the same information sources and Algonquin's proposed conservation measures for several Connecticut state-listed animals, as presented in table 4.7.5-1, we have concluded that the Project would not affect the American bittern, pied-billed grebe, savannah sparrow, red bat, eastern cougar, and ground beetle; and would not have a significant effect on the American kestrel, eastern box turtle, eastern hognose snake, Jefferson salamander "complex," and pine barrens tiger beetle.

#### **4.7.5.3 Rhode Island**

Algonquin consulted with the RIDEM/ Rhode Island Natural Heritage Program to determine if any state-listed species are known to occur near Algonquin's Burrillville Compressor Station site (Jordan, 2013). No known records of occurrence of state-protected species were identified. Therefore, the Project would not affect state-listed species or habitats in Rhode Island.

#### **4.7.5.4 Massachusetts**

Algonquin consulted with the MDFW/MNHESP to determine if any state-listed species are known to occur along Algonquin's proposed West Roxbury Lateral or its existing and proposed M&R stations in Middlesex, Norfolk, Bristol, Plymouth and Suffolk Counties (MDFW, 2013b; French, 2013). No known occurrences of state-listed species were reported by MDFW and MNHESP for the Project areas in Massachusetts. Therefore, the Project would not affect state-listed species or habitats in Massachusetts.

### **4.8 LAND USE, RECREATION, SPECIAL INTEREST AREAS, AND VISUAL RESOURCES**

#### **4.8.1 Land Use**

The AIM Project would consist of 37.4 miles of replacement, loop extension, and new natural gas pipeline that would cross three counties in the State of New York, four counties in the State of Connecticut, and two counties in the Commonwealth of Massachusetts; and new aboveground facilities and modifications to existing aboveground facilities in three counties in New York, six counties in Connecticut, one county in the State of Rhode Island, and five counties in Massachusetts. Of the 37.4 miles of pipeline, 20.1 miles would replace existing 26-inch-diameter mainline pipeline with 42-inch-diameter pipeline, 2.0 miles would extend an existing loop pipeline with 36-inch-diameter pipeline, 9.1 miles would replace existing 6-inch-diameter pipeline with 16-inch-diameter pipeline, 1.3 miles of new 12-inch-diameter pipeline would loop an existing pipeline, and 4.9 miles would consist of installation of new 16-inch and 24-inch-diameter lateral pipelines (see table 2.1.1-1). In addition to the installation of replacement, loop extension, or new pipeline, about 0.9 mile of Algonquin's existing 26-inch-diameter Southwest to MLV 19 pipeline would be abandoned in place. The proposed Project would also include modifications to 6 existing compressor stations, modifications to 24 existing M&R stations, construction of 3 new M&R stations, removal of one existing M&R station, construction of pig launcher and receiver facilities, construction of 1 new MLV, and modifications to 5 existing MLVs sites (see table 2.1.2-1).

##### **4.8.1.1 Environmental Setting**

Six general land use types would be affected by the AIM Project, which include open land, agricultural, forest/woodland, industrial/commercial, residential, and open water. Table 4.8.1-1 summarizes the acreage of each land use type that would be affected by construction and operation of the Project. The definitions of each land use type are as follows:

- Open land – includes Algonquin's existing pipeline right-of-way, other utility rights-of-way, open fields, vacant land, herbaceous and scrub-shrub uplands, non-forested lands, emergent wetland, scrub-shrub wetland, golf courses, and municipal land;
- Agricultural – includes active hayfields and cultivated lands;
- Forest/woodland – includes mixed oak forest and forested wetlands;

- Industrial/commercial – includes manufacturing or industrial plants, paved areas, landfills, mines, quarries, electric power or natural gas utility facilities, developed areas, roads, railroads and railroad yards, and commercial or retail facilities;
- Residential – includes existing developed residential areas and planned residential developments. This may include large developments, low, medium, and high density residential neighborhoods; urban/suburban residential; multi-family residences; residentially zoned areas that have been developed; or short segments of the route at road crossings with homes near the route alignment; and
- Open water – includes all waterbody crossings, unless the waterbody is not visible on aerial photography (in which case it is incorporated into the surrounding land use).

Construction of the Project would impact a total of about 575.6 acres. About 78 percent of this acreage would be utilized for the pipeline facilities, including the construction right-of-way and ATWS. The remaining acreage impacted during construction would be associated with aboveground facilities (16 percent), pipe and contractor ware yards (5 percent), and access roads (less than 1 percent). The primary land use types impacted during construction would be forest/woodland (33 percent), open land (28 percent), industrial/commercial land (26 percent), and residential land (9 percent). Agricultural land and open water would make up the remaining 4 percent of land types impacted during construction of the proposed Project.

Following construction, about 42.4 acres of new land outside of Algonquin's existing permanent right-of-way would be permanently encumbered by operation of the Project. About 80 percent of this acreage would be for the new pipeline right-of-way, 16 percent for aboveground facilities, and 4 percent for new permanent access roads. The primary land use types that would be permanently encumbered would be forest/woodland (64 percent), open land (18 percent), industrial/commercial land (7 percent), and agricultural land (7 percent). Open water and residential land would make up the remaining 4 percent of permanent impacts.

Forest/woodland affected by the Project would consist mainly of mixed oak forest and consists of both wetland and upland areas. Algonquin would minimize forest land impacts by locating Project facilities and work areas within existing rights-of-way and on open land wherever possible. Following construction activities, forest/woodland cleared outside of the permanent right-of-way would be allowed to regenerate to preconstruction conditions, but impacts on forest resources within these areas would last for several years. Forest/woodland falling within the new maintained permanent right-of-way would be permanently converted to a non-forested condition.

Open land could be temporarily impacted during Project construction by removal of vegetation and disturbance of soils. Impacts on open land would be temporary and short term, and would be minimized by the implementation of the E&SCP and by restoring open land areas to preconstruction conditions. Since the permanent pipeline right-of-way would be maintained as open land, there would be no permanent change in land use where the right-of-way crosses existing open land areas. Following construction, these areas would continue to function as open land. However, some activities, such as the building of new commercial or residential structures, would be prohibited on the new permanent right-of-way.

TABLE 4.8.1-1															
Land Use Types and Acres Impacted by Construction and Operation of the AIM Project <sup>a</sup>															
		Open Land		Agricultural		Forest/Woodland		Industrial/ Commercial		Residential		Open Water		Total	
Facility	County, State	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.
PIPELINE FACILITIES <sup>b,c</sup>															
Replacement Pipeline															
Haverstraw to Stony Point Take-up and Relay	Rockland, NY	17.8	0.0	0.0	0.0	15.3	0.0	3.8	0.0	8.5	0.0	0.1	0.0	45.5	0.0
Stony Point to Yorktown Take-up and Relay	Rockland, NY	17.8	0.1	0.0	0.0	15.7	2.3	1.1	0.1	5.2	0.1	0.0	0.6	39.8	3.2
	Westchester, NY	39.1	0.3	1.6	0.0	57.0	8.6	15.2	1.0	13.4	0.1	0.1	0.4	126.4	10.4
Southeast to MLV 19 Take-up and Relay	Putnam, NY	0.9	0.0	0.0	0.0	0.4	0.0	3.9	0.0	0.0	0.0	0.0	0.0	5.2	0.0
	Fairfield, CT	21.1	0.0	0.0	0.0	17.6	0.0	9.7	0.0	8.4	0.0	0.0	0.0	56.8	0.0
E-1 System Lateral Take-up and Relay	New London, CT	45.6	4.4	13.0	0.9	34.1	2.9	2.0	0.1	0.2	0.0	0.2	0.0	95.1	8.3
Loop Extension															
Line-36A Loop Extension	Middlesex, CT	4.3	0.6	8.1	1.9	6.9	3.0	0.9	0.2	0.9	0.3	0.0	0.0	21.1	6.0
	Hartford, CT	0.5	0.0	0.6	0.1	1.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.5
E-1 System Lateral Loop Extension	New London, CT	3.4	0.4	0.0	0.0	9.5	2.6	0.7	0.0	0.6	0.2	0.0	0.0	14.2	3.2
New Pipeline															
West Roxbury Lateral	Norfolk, MA	4.7	0.9	0.0	0.0	1.6	0.6	18.6	0.8	4.5	0.0	0.1	0.0	29.5	2.3
	Suffolk, MA	0.0	0.0	0.0	0.0	2.1	0.0	2.1	0.0	9.8	0.0	0.0	0.0	14.0	0.0
Pipeline Facilities Subtotal		155.2	6.7	23.3	2.9	161.7	20.4	58.0	2.2	51.5	0.7	0.5	1.0	450.2	33.9

TABLE 4.8.1-1 (cont'd)															
Land Use Types and Acres Impacted by Construction and Operation of the AIM Project <sup>a</sup>															
		Open Land		Agricultural		Forest/Woodland		Industrial/ Commercial		Residential		Open Water		Total	
Facility	County, State	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.
ABOVEGROUND FACILITIES															
Existing Compressor Stations															
Stony Point Compressor Station	Rockland, NY	1.0	0.0	0.0	0.0	7.6	0.9	11.7	0.7	0.0	0.0	0.0	0.0	20.3	1.6
Southeast Compressor Station	Putnam, NY	0.2	0.0	0.0	0.0	5.1	0.0	10.6	0.0	0.0	0.0	0.0	0.0	15.9	0.0
Oxford Compressor Station	New Haven, CT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cromwell Compressor Station	Middlesex, CT	0.2	0.0	0.0	0.0	3.2	1.7	11.5	0.2	0.0	0.0	0.0	0.0	14.9	1.9
Chaplin Compressor Station	Windham, CT	1.6	0.0	0.0	0.0	3.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0	11.7	0.0
Burrillville Compressor Station	Providence, RI	0.2	0.0	0.0	0.0	5.9	0.0	10.6	0.0	0.0	0.0	0.0	0.0	16.7	0.0
Compressor Stations Subtotal		3.2	0.0	0.0	0.0	24.8	2.6	51.5	0.9	0.0	0.0	0.0	0.0	79.5	3.5
Existing M&R Station Modifications															
Stony Point M&R Station <sup>d</sup>	Rockland, NY	0.6	0.0	0.0	0.0	0.8	0.0	0.7	0.0	0.0	0.0	0.1	0.0	2.2 <sup>d</sup>	0.0
Peekskill M&R Station <sup>d</sup>	Westchester, NY	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.7	0.0	0.0	0.0	2.1 <sup>d</sup>	0.0
Cortlandt M&R Station <sup>d</sup>	Westchester, NY	1.2	0.0	0.0	0.0	1.4	0.0	0.2	0.0	1.0	0.0	0.0	0.0	3.8 <sup>d</sup>	0.0
West Danbury M&R Station <sup>e</sup>	Fairfield, CT	1.2	0.0	0.0	0.0	1.3	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.3 <sup>e</sup>	0.0
Southbury M&R Station	New Haven, CT	0.1	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Waterbury M&R Station	New Haven, CT	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0
North Haven M&R Station	New Haven, CT	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Guilford M&R Station	New Haven, CT	0.0	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.5	0.0

TABLE 4.8.1-1 (cont'd)															
Land Use Types and Acres Impacted by Construction and Operation of the AIM Project <sup>a</sup>															
Facility	County, State	Open Land		Agricultural		Forest/Woodland		Industrial/ Commercial		Residential		Open Water		Total	
		Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.
Farmington M&R Station	Hartford, CT	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Glastonbury M&R Station	Hartford, CT	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.8	0.0
Middletown M&R Station	Middlesex, CT	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Salem Pike M&R Station	New London, CT	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0
Montville M&R Station <sup>d</sup>	New London, CT	0.0	0.0	0.0	0.0	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	1.2 <sup>d</sup>	0.0
Willimantic M&R Station	Windham, CT	0.0	0.0	0.0	0.0	0.7	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.9	0.5
Pomfret M&R Station	Windham, CT	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Putnam M&R Station	Windham, CT	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0
North Fall River M&R Station <sup>f</sup>	Bristol, MA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0 <sup>f</sup>	0.0
New Bedford M&R Station	Bristol, MA	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	1.8	0.0
Middleborough M&R Station	Plymouth, MA	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Brockton M&R Station	Plymouth, MA	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0
Norwood M&R Station	Norfolk, MA	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8	0.0
Needham M&R Station	Norfolk, MA	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.4	0.0
Wellesley M&R Station	Norfolk, MA	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Mystic M&R Station	Middlesex, MA	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0
Existing M&R Stations Subtotal		0.3	0.0	0.0	0.0	1.7	0.5	9.2	0.0	0.0	0.0	0.0	0.0	11.2	0.5



TABLE 4.8.1-1 (cont'd)															
Land Use Types and Acres Impacted by Construction and Operation of the AIM Project <sup>a</sup>															
		Open Land		Agricultural		Forest/Woodland		Industrial/ Commercial		Residential		Open Water		Total	
Facility	County, State	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.	Total Const.	New Perm.
<b>New M&amp;R Stations</b>															
Oakland Heights M&R Station <sup>g</sup>	New London, CT	0.8	0.0	0.0	0.0	1.6	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.4
Assonet M&R Station	Bristol, MA	0.3	0.1	0.0	0.0	0.7	0.1	0.5	0.0	0.0	0.0	0.0	0.0	1.5	0.2
West Roxbury M&R Station <sup>d</sup>	Suffolk, MA	0.0	0.0	0.0	0.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0 <sup>d</sup>	1.0
New M&R Stations Subtotal		1.1	0.1	0.0	0.0	2.3	2.5	0.5	0.0	0.0	0.0	0.0	0.0	3.9	2.6
<b>Existing M&amp;R Station Removal</b>															
Greenville M&R Station <sup>g</sup>	New London, CT	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0
<b>Aboveground Facility Subtotal</b>		<b>4.8</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>28.8</b>	<b>5.6</b>	<b>61.3</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>94.9</b>	<b>6.6</b>
<b>PIPE AND CONTRACTOR WARE YARDS</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>28.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>28.6</b>	<b>0.0</b>
<b>ACCESS ROADS</b>		<b>0.9</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.9</b>	<b>1.9</b>
<b>PROJECT TOTAL</b>		<b>160.9</b>	<b>7.7</b>	<b>23.3</b>	<b>2.9</b>	<b>191.5</b>	<b>27.0</b>	<b>147.9</b>	<b>3.1</b>	<b>51.5</b>	<b>0.7</b>	<b>0.5</b>	<b>1.0</b>	<b>575.6</b>	<b>42.4</b>
<sup>a</sup> The subtotals and totals shown in this table may not equal the sums of the addends due to rounding.															
<sup>b</sup> The acreage shown for the land affected during construction includes all construction workspace, including the existing permanent right-of-way and includes the new land area that would be permanently affected during operation.															
<sup>c</sup> The acreage shown for the land affected during operation includes only the new permanent right-of-way, not Algonquin's existing permanent easement.															
<sup>d</sup> The temporary workspace shown for each of these M&R stations would be within the overall workspace area for pipeline facilities; therefore, these areas are not included in subtotal and total calculations.															
<sup>e</sup> A portion of the temporary workspace at the West Danbury M&R Station would fall within the overall temporary workspace area for pipeline facilities; only the portion outside the overall pipeline workspace (0.3 acre) is included in subtotal and total calculations.															
<sup>f</sup> The workspace that would be required at the North Fall River M&R Station would fall within the workspace for the new Assonet M&R Station; therefore, it is not listed here.															
<sup>g</sup> The acres of land affected during construction at these facilities includes staging areas located a short distance away from the actual M&R station site.															

Industrial and commercial land uses could be temporarily impacted during Project construction by increased dust from exposed soils, construction noise, and traffic congestion. Impacts on industrial and commercial properties would be restored to preconstruction conditions or as specified in specific landowner agreements. All road surfaces would be quickly reestablished so that normal access to area businesses can resume. Most often, access would be reestablished by the contractor's filling in the trench and leaving either a dirt surface or a rough coat of pavement to restore access. So that construction equipment would not tear up the road surface when traveling across it during construction, a separate contractor would usually return later to complete final paving, at which time the road surface is considered permanently restored to pre-existing conditions. Crossing of private driveways would be coordinated with business owners so as to maintain vehicle access and minimize impacts. Steel plates and/or wood mats would be kept on-site at all times so that a temporary platform can be made across the trench should the need arise. Additional discussion of traffic-related impacts is provided in section 4.9.5.

Agricultural land uses could be temporarily impacted during Project construction by removal of vegetation, disturbance of soils, and increased dust from exposed soils. Agricultural land in the Project area consists of feed and hay corn not considered specialty crops. Following construction, all impacted agricultural land would be restored to preconstruction conditions to the extent possible, in accordance with Algonquin's E&SCP, and with any specific requirements identified by landowners or state or federal agencies with appropriate jurisdiction. Algonquin would acquire 2.9 acres of agricultural land as new permanent right-of-way, but operation of the proposed pipeline would not affect the continuing use of these areas for agricultural activities after construction is complete.

Effects of construction on agricultural land would be minor and short term. Algonquin would maintain landowner access to fields, storage areas, structures, and other agricultural facilities during construction and would maintain irrigation and drainage systems that cross the right-of-way to the extent practicable. Landowners would be compensated for crop losses and other damages caused by construction activities. Algonquin's landowner-compensation program would address temporary loss of productivity in affected areas after construction.

#### **4.8.1.2 Pipeline Facilities**

The proposed replacement, loop, and lateral pipeline would consist of 37.4 miles of multi-diameter pipe. Of this amount, about 26.3 miles (70 percent) would consist of replacement of existing pipeline and about 11.1 miles (30 percent) would consist of new pipeline loops and one new lateral.

The predominant land use that would be crossed by the pipelines is open land (55 percent) followed by forest/woodland (14 percent), residential (14 percent), industrial/commercial (9 percent), agricultural (6 percent), and open water (2 percent). Of the 37.4 miles of proposed pipeline, about 93 percent would be within or adjacent to existing rights-of-way, consisting of pipeline rights-of-way currently occupied by Algonquin, public roadways, railways, and/or other utility rights-of-way. Land use-related impacts associated with the Project would include the disturbance of existing uses within the right-of-way during construction and retention of an expanded or new permanent right-of-way for operation of the pipeline.

The replacement portions of the Project pipeline facilities would cross 29.2 miles of land, consisting of 65 percent open land, 13 percent forest/woodland, 11 percent residential, 5 percent agricultural, 3 percent industrial/commercial, and 3 percent open water. The loop extension portions of the Project pipeline facilities would cross 3.3 miles of land, consisting of 40 percent open land, 33 percent forest/woodland, 21 percent agricultural, and 6 percent residential. The new pipeline portion of the Project pipeline facilities would cross 4.9 miles of land, consisting of 49 percent industrial/commercial, 39 percent residential, 6 percent open land, and 6 percent forest/woodland.

For the replacement portions of the Project, Algonquin would generally use a 100-foot-wide construction right-of-way. This 100-foot right-of-way width would not include special crossing areas such as wetlands and waterbodies, residential areas, and agricultural areas where other construction right-of-way widths are proposed. The construction right-of-way would include the use of the existing 75-foot-wide permanent right-of-way to the extent practicable, as well as additional workspace. There are three exceptions to this proposed right-of-way use:

- For the portion of the Stony Point to Yorktown Take-up and Relay segment crossing the Blue Mountain Reservation in the Town of Cortlandt, New York, Algonquin would utilize an existing 75-foot-wide maintenance easement and 25 feet of additional temporary right-of-way, and the replacement pipeline would be installed and operated within an existing 6-foot-wide permanent easement.
- For the portion of the Stony Point to Yorktown Take-up and Relay segment associated with the HDD crossing of the Hudson River, Algonquin would utilize a 75-foot-wide construction right-of-way and a 50-foot-wide permanent right-of-way where the route deviates from the existing right-of-way on land. Within the Hudson River itself, there would be no construction right-of-way with the use of HDD, but a new nominal 10-foot-wide permanent right-of-way would be established across the river.
- For the E-1 System Lateral Take-up and Relay segment, Algonquin would use a 75-foot-wide construction right-of-way (including the existing 50-foot-wide permanent easement to the extent practicable), and would obtain an additional 10 feet of new permanent right-of-way along some portions.

For the Line-36A Loop Extension portion of the Project, Algonquin would use an 85-foot-wide construction right-of-way (including the use of the existing 75-foot-wide permanent right-of-way to the extent practicable, and an additional 10 to 35 feet of temporary workspace). Algonquin also would obtain an additional 20 to 30 feet of new permanent right-of-way. For the E-1 System Lateral Loop Extension portion of the Project, Algonquin would use a 75-foot-wide construction right-of-way (including the use of the existing 30-foot-wide permanent right-of-way, an additional 25 feet of temporary workspace, and an additional 20 feet of new permanent right-of-way).

For the new pipeline portion of the Project, the construction right-of-way would vary between 15 feet and 75 feet in width, depending on location. The permanent right-of-way would be 50 feet wide, where available.

In addition to the construction right-of-way, various ATWSs would be used for construction. As discussed in section 2.2.1.5, Algonquin identified several areas where it believes site-specific conditions require the use of ATWS outside the proposed construction right-of-way. Table C-1 in appendix C lists the locations of these ATWSs and their dimensions. Table C-1 also lists the acreage of impact and the justifications for the use of additional workspace.

In addition to the installation of replacement, loop extension, or new pipeline described above, about 0.9 mile of Algonquin's existing 26-inch-diameter Southwest to MLV 19 pipeline would be abandoned in place along the Interstate 84/Still River HDD segment. This activity would not impact any additional land.

#### **4.8.1.3 Aboveground Facilities**

Construction at the 28 M&R stations, 6 compressor stations, and various MLV and launcher/receiver sites in New York, Connecticut, Rhode Island, and Massachusetts would disturb a total

of about 94.9 acres of land. Of this total, about 6.6 acres would be permanently retained for operation of the aboveground facilities. Table 4.8.1-1 above summarizes the land requirements and land use for the aboveground facilities associated with the Project. The primary land uses that would be affected by these facilities are industrial/commercial (65 percent) and forest/woodland (30 percent). Open land would make up the remaining 5 percent.

### **Compressor Station Modifications**

Algonquin proposes to modify six existing compressor stations to add 81,620 hp to its pipeline system as part of the Project. The compressor station modifications would impact a total of about 79.5 acres of land during construction. Of the 79.5 acres, about 3.5 acres (4 percent) would consist of new land that would be permanently affected by operation of the modified compressor stations within the existing station property owned by Algonquin.

AIM Project modifications at the Stony Point Compressor Station in Rockland County, New York would impact a total of about 20.3 acres of land, consisting of 58 percent industrial/commercial land, 37 percent forest/woodland, and 5 percent open land. Of the 20.3 acres, about 1.6 acres of new land would be permanently affected by operation of the modified facility (56 percent forest/woodland and 44 percent industrial land). Outside the permanently affected area, construction impacts would be temporary and short term, except on forested land where impacts would be long term. The area surrounding the station property is predominantly forested, with some residential land nearby.

Modifications at the Southeast Compressor Station in Putnam County, New York would impact a total of about 15.9 acres of land, consisting of 67 percent industrial/commercial land, 32 percent forest/woodland, and 1 percent open land. No new land would be permanently impacted by operation of the modified compressor station. Construction impacts would be temporary and short term, except on forested land where impacts would be long term. The area surrounding the station property is predominantly forested.

At the Oxford Compressor Station in New Haven County, Connecticut modifications would be conducted entirely inside the existing compressor building. Therefore, construction and operation of the Project would not impact any land.

AIM Project modifications at the Cromwell Compressor Station in Middlesex County, Connecticut would impact a total of about 14.9 acres of land, consisting of 77 percent industrial/commercial land, 22 percent forest/woodland, and 1 percent open land. Of the 14.9 acres, about 1.9 acres of new land would be permanently affected by operation of the modified compressor station (89 percent forest/woodland and 11 percent industrial/commercial land). Outside the permanently affected area, construction impacts would be temporary and short term, with the exception of forested land where impacts would be long term. The area surrounding the station property is predominantly forested, with some industrial/commercial and agricultural land nearby.

Modifications at the Chaplin Compressor Station in Windham County, Connecticut would impact a total of about 11.7 acres of land, consisting of 61 percent industrial/commercial land, 25 percent forest/woodland, and 14 percent open land. No new land would be permanently impacted by operation of the modified compressor station. Construction impacts would be temporary and short term, except on forested land where impacts would be long term. The area surrounding the station property is predominantly forested.

At the Burrillville Compressor Station in Providence County, Rhode Island modifications would impact a total of about 16.7 acres of land, consisting of 64 percent industrial/commercial land, 35 percent forest/woodland, and 1 percent open land. No new land would be permanently impacted by operation of

the modified compressor station. Construction impacts would be temporary and short term, except on forested land where impacts would be long term. The area surrounding the station property is predominantly forested, with some residential land nearby.

### **New and Modified M&R Stations**

Algonquin proposes to modify 24 existing M&R stations in New York, Connecticut, and Massachusetts to accept the new gas flows associated with the AIM Project. Modifications at 21 of the 24 existing stations are minor in nature and would take place within the existing fenced facilities. The remaining three M&R stations (Guilford, Glastonbury, and Willimantic M&R Stations) would require complete reconstruction because the existing station piping and metering equipment, and in the case of the Willimantic M&R Station, the existing station site, are significantly undersized to accommodate the increase in the projected flow rate. The M&R station modifications would temporarily impact a total of about 11.2 acres of land. Of the 11.2 acres, about 0.5 acre (4 percent) would consist of new land that would be permanently affected by operation of the modified Willimantic M&R Station. None of the other 23 modified M&R stations would permanently impact new land during operation.

Algonquin proposes to construct three new M&R stations to accept the new gas flows associated with the AIM Project. Construction of the three new M&R stations would temporarily impact a total of about 3.9 acres of land. Of the 3.9 acres, about 2.6 acres (67 percent) would consist of new land that would be permanently affected by operation of the new M&R stations.

Algonquin also proposes to decommission and remove one M&R station in New London County, Connecticut. The Greenville M&R Station would be removed and replaced by the new Oakland Heights M&R Station once that station has been constructed and is in service. Removal of the Greenville M&R Station would temporarily impact about 0.3 acre of land, and would not permanently impact any new land.

Land impacts for M&R station construction activities are summarized below by state. See table 4.8.1-1 for impacts at individual stations.

- In New York, there would be no additional impacts from M&R station activities. The temporary workspaces at M&R stations in New York would fall entirely within the workspace for pipeline facilities, and there would be no new permanent land impacts.
- In Connecticut, M&R station activities would temporarily impact about 8.5 acres of land, consisting of 47 percent industrial/commercial, 39 percent forest/woodland, and 14 percent open land. Of the 8.5 acres, 1.9 acres (22 percent) would be permanently impacted by operation of the Willimantic M&R Station and the new Oakland Heights M&R Station. Outside the permanently affected area, construction impacts would be temporary and short term, except on forested land where impacts would be long term.
- In Massachusetts, M&R station activities would temporarily impact about 6.9 acres of land, consisting of 84 percent industrial/commercial, 10 percent forest/woodland, and 6 percent open land. Of the 6.9 acres, 1.2 acres (17 percent) would be permanently impacted by operation of the new Assonet and West Roxbury M&R Stations. Outside the permanently affected area, construction impacts would be temporary and short term, except on forested land where impacts would be long term.

## **Other Aboveground Facilities**

As part of the AIM Project, Algonquin would also modify three existing MLV sites and five existing launcher/receiver sites, construct five new launcher/receiver sites, construct new cross over piping at two locations, and construct one new MLV (see table 2.1.2-1 ). Modification and construction activities for these facilities would take place within the Algonquin's proposed permanent right-of-way and construction work areas for pipeline facilities; therefore, these additional aboveground facilities would not impact any additional land.

### **4.8.1.4 Pipe and Contractor Ware Yards**

Algonquin proposes to use three pipe and contractor ware yards during construction of the AIM Project facilities. Of the three yards, one would be located in New York and two would be located in Connecticut. We received numerous comments about a contractor yard on parkland in the Town of Yorktown, New York. Algonquin is no longer proposing to use a contractor ware yard in the Town of Yorktown. These yards would impact about 28.6 acres of land, consisting of 100 percent industrial/commercial land (see table 4.8.1-1). These impacts would be temporary and the pipe and contractor ware yards would not permanently affect any new land.

### **4.8.1.5 Access Roads**

In addition to the existing access available by the use of public roads, Algonquin has identified a total of 36 access roads for use on the AIM Project (16 in New York, 16 in Connecticut, and 4 in Massachusetts). These 36 access roads would include 28 TARs and 8 PARs. With one exception, the access roads are comprised of existing gravel roads, unimproved dirt roads, paved and gravel driveways, private industrial and commercial roads, paved parking lots, and golf course roads. The exception is a new PAR to be constructed for the Assonet M&R Station.

The one new PAR to be constructed for the new Assonet M&R Station would run from the existing North Fall River M&R Station to the Assonet M&R Station. This new PAR would disturb less than 0.1 acre (0.03 acre) of land. The area impacted by this new PAR would fall entirely within the new permanent pipeline right-of-way; therefore, it is not included in the 1.9-acre total of impacts associated with access roads.

For all other temporary and permanent access, Algonquin would use existing roads. However, of these existing roads, six TARs and one PAR would require minor upgrades and/or widening (by about 10 feet) for use during pipeline construction. These upgrades would result in about 1.9 acres of new permanent land disturbance, consisting of 53 percent forest/woodland and 47 percent open land (see table 4.8.1-1).

See table 2.2.4-1 for the locations, lengths, and acres of impact for all individual TARs and PARs associated with the AIM Project.

## **4.8.2 Land Ownership and Easement Requirements**

Pipeline operators must obtain easements from existing landowners to construct and operate proposed facilities, or acquire the land on which the facilities would be located. Easements can be temporary, granting the operator the use of the land during Project construction (e.g., ATWSs, temporary access roads, contractor ware yards), or permanent, granting the operator the right to operate and maintain the facilities once constructed.

Algonquin's existing permanent easements give it the right to maintain the existing right-of-way as necessary for pipeline operation. Where the proposed pipeline construction activities occur within Algonquin's existing rights-of-way, it would not need to acquire new easements or property to operate the proposed facilities. However, Algonquin would need to acquire new easements or acquire the necessary land to construct and operate the new pipeline where any of the proposed activities deviate from the existing right-of-way. These new easements would convey both temporary (for construction) and permanent rights-of-way to Algonquin.

In addition to the right to use specific property for construction, operation, maintenance, pipeline repair and replacement, and related activities as referenced above, an easement agreement between a company and a landowner typically specifies compensation for losses resulting from construction. This includes losses of non-renewable and other resources, damages to property during construction, and restrictions on existing uses that would not be permitted on the permanent right-of-way after construction. Compensation would be based on a market study conducted by a licensed real estate appraiser.

If an easement cannot be negotiated with a landowner and the Project is approved by the Commission, Algonquin may use the right of eminent domain to acquire the property necessary to construct the Project. This right would extend to all Project-related workspace covered by the Commission's approval, including the temporary and permanent rights-of-way, aboveground facility sites, pipe and contractor ware yards, access roads, and ATWSs. Algonquin would still be required to compensate the landowner for the right-of-way and damages incurred during construction. However, the level of compensation would be determined by a court according to state or federal law.

Algonquin plans to retain its easement and maintain the rights-of-way following the installation of the pipeline facilities except as otherwise provided in the existing easements or modified as part of the negotiations with the landowner.

### **4.8.3 Existing Residences, Commercial and Industrial Facilities, and Planned Developments**

#### **4.8.3.1 Existing Residences and Commercial and Industrial Facilities**

Table H-1 in appendix H lists residences and other structures located within 50 feet of the construction work areas associated with the AIM Project (i.e., construction right-of-way, ATWS, and pipe and contractor ware yards) by milepost, and indicates the type of structure and its distance from the proposed Project work areas. Based on field surveys and aerial photography, Algonquin's proposed construction work areas would be located within 50 feet of 332 residential structures (i.e., houses and apartment buildings) and 94 non-residential structures (i.e., commercial or industrial facilities, sheds, garages).

The residential structures within 50 feet of the construction work areas would experience effects of Project construction and operation. In general, as distance from the construction work area increases, the impacts on residences decrease. In residential areas, the two most significant impacts associated with construction and operation of a pipeline are temporary disturbances during construction and the encumbrance of a permanent right-of-way, which would restrict the construction of new permanent structures within the right-of-way. Temporary impacts during construction of the pipeline facilities in residential areas could include: inconvenience caused by noise and dust generated by construction traffic; disruption to access of homes by trenching of roads or driveways; increased localized traffic from transporting workers, equipment, and materials to the work site; disturbance of lawns, landscaping, and visual character caused by the removal of turf, shrubs, trees, and/or other landscaping between residences and adjacent rights-of-way; and potential damage to existing septic systems or wells.

Special construction and restoration methods would be used at site-specific locations to minimize residential neighborhood disruptions and to reduce impacts during construction. In particular, crossing of any private driveways would be managed in such a way as to ensure that access to residential homes and businesses is maintained at all times. During negotiations with landowners, pipeline crossing locations can be established for residents to drive across the right-of-way to access other parts of their property if desired. Disruption to residential utilities would be minimized by using the local “One Call” system to locate utilities, and by hand digging. In the event of a disruption of service, immediate steps would be taken to restore service such as calling the service provider and keeping repair clamps on site in case a residential water or sewer system is encountered.

Algonquin would implement the following general measures to minimize construction-related impacts on residential areas:

- install safety fence at the edge of the construction right-of-way for a distance of 100 feet on either side of a residence within 50 feet of the construction right-of-way;
- attempt to preserve mature trees, vegetative screens, and landscaping within the construction work area to the extent possible;
- backfill the trench as soon as the pipe is laid or place temporary steel plates or timber mats over the trench; and
- complete final cleanup (including final grading) and installation of permanent erosion control measures within 10 days after the trench is backfilled.

For the residences within 50 feet of the construction workspace, Algonquin has developed Residential Construction Plans to inform affected landowners of proposed measures to minimize disruption and to maintain access to the residences (see appendix H). The plans include a dimensioned drawing depicting the residence relative to the pipeline construction; workspace boundaries; the proposed right-of-way; and nearby residences, structures, roads, and miscellaneous features (e.g., other utilities, playgrounds, etc.). Notes that describe the general measures that would be implemented at residential properties (e.g., landowner notification prior to construction, installation of safety fencing), potential construction techniques to be used, workspace restrictions, anticipated construction schedule, and safety considerations are also included. Algonquin provided its Residential Construction Plans to property owners for review and comment in March 2014. Algonquin has received feedback from landowners on several of the plans.

Based on our review of those plans, in the draft EIS we requested that Algonquin address the possibility of reducing its construction work area to maintain at least a 10-foot separation from all residences in New York and Connecticut, unless a site-specific justification for being within 10 feet was provided. Algonquin filed revised Residential Construction Plans on September 29, 2014, incorporating additional site-specific details and revising the proposed workspaces to ensure that construction work areas are greater than 10 feet from residences in New York and Connecticut, where possible. However, there remain some residences that are less than 10 feet from construction work areas. One residence located at about MP 1.0 of the Haverstraw to Stony Point Take-up and Relay would be about 9 feet from a proposed work area; this work area cannot be further reduced because it is necessary to facilitate the crossing of a wetland. There is also a residence located within the proposed work area at about MP 10.7 of the Stony Point to Yorktown Take-up and Relay; this residence has been purchased by Algonquin and would be removed. With these two exceptions, all residences within 10 feet of the proposed construction area in New York and Connecticut are also located within 10 feet of Algonquin’s existing permanent easement. Because they are within 10 feet of the existing permanent easement, these residences may already experience maintenance activities within 10 feet, and further reduction in construction workspace



is not warranted. We conclude that Algonquin's revised Residential Construction Plans would minimize, potential impacts on residences within 10 feet of the construction workspace to the extent possible.

Many of the residences identified within 50 feet of the construction work area (including those within 10 feet) are located along the West Roxbury Lateral. We recognize that all activities within 50 feet of residences along the West Roxbury Lateral would be associated with in-street construction; therefore, no residential land would be affected. However, Algonquin developed and provided the Residential Construction Plans to property owners with residences within 50 feet in this area to inform them about the proximity of the work to their houses and measures that would be taken to minimize impacts (e.g., installation of safety fencing).

We have reviewed Algonquin's revised Residential Construction Plans and find them acceptable overall. However, to ensure that the Residential Construction Plans address landowner comments received by Algonquin and allow property owners adequate opportunity for input regarding construction activity so close to their residence, **we recommend that:**

- **Prior to construction of the AIM Project, Algonquin should file with the Secretary, for review and written approval of the Director of the OEP, a revised set of Residential Construction Plans that incorporate and address the comments Algonquin received from affected landowners.**

Following construction, all residential areas would be restored to preconstruction conditions or as specified in written landowner agreements. Landowners would continue to have use of the right-of-way provided it does not interfere with the easement rights granted to Algonquin for construction and operation of the pipeline facilities. For example, no structures would be allowed on the permanent right-of-way, including houses, decks, playgrounds, tool sheds, garages, poles, guy wires, catch basins, swimming pools, trailers, leach fields, septic tanks, or other structures not easily removed.

Algonquin has also developed and provided an Environmental Complaint Resolution Procedure Plan as part of its application. It identifies procedures that Algonquin would take to address landowner calls received during construction and how the procedures would be implemented. Algonquin would provide this procedure to landowners via letter prior to construction. The letter would include a toll free telephone number to contact with questions or concerns and the commitment that a response to the question or concern would be provided no later than 48 hours after receiving the initial call. In the event the response is not satisfactory, the proposed letter would identify the FERC's Dispute Resolution Service Helpline contact information. We have reviewed the plan and find it acceptable.

We conclude that implementation of Algonquin's construction methods for working in proximity to residences and other structures and site-specific Residential Construction Plans would minimize disruption to residential and commercial areas to the extent practicable and facilitate restoration of these areas as soon as possible upon completion of construction. Further, Algonquin's Environmental Complaint Resolution Procedure Plan would promote resolution of landowner issues.

We received a comment from the Town of Cortlandt expressing concern that the proposed Project would undermine the residential land use policies of the Town's Comprehensive Master Plan. The Comprehensive Master Plan is a document containing recommended policies to "help the Town direct and manage the decision-making process for years to come" (Town of Cortlandt, 2004). In particular, the comment noted that the Comprehensive Master Plan states a policy of "preserv[ing] and reinforc[ing] the Town's basic residential character." This policy is specifically related to residential density planning. The policy seeks to preserve the town's residential character by ensuring that "higher residential densities will remain focused in already built-up areas and in hamlet centers," and recommends that the Town

evaluate some areas for future upzoning to reduce residential densities. The proposed pipeline would not impact the Town's ability to focus higher residential densities in already-developed areas; therefore, it would not conflict with the Comprehensive Master Plan's recommended policy. The comment also notes that the Comprehensive Master Plan recommends adopting an Open Space Plan that emphasizes a "natural buffer between and within residential neighborhoods to protect and enhance quality of life and neighborhood character." Although new permanent right-of-way would be required in the Town of Cortlandt, an existing wooded buffer would be maintained between existing residential areas and the new permanent easement; therefore, the Project would not impact the natural buffer between and within existing residential neighborhoods in Cortlandt.

#### **4.8.3.2 Planned Developments**

Algonquin contacted landowners and local officials in the municipalities that would be affected by the AIM Project to identify planned residential, commercial, or industrial developments within 0.25 mile of the proposed facilities. Planned developments identified within 0.25 mile of the AIM Project are described and listed in table 4.8.3-1. A discussion of cumulative impacts associated with the proposed Project and these developments is provided in section 4.13.

Several of the planned developments, although located within 0.25 mile of the AIM Project, would not be crossed by any Project facilities (see table 4.8.3-1). Planned construction dates are not currently available for any of these developments. Since the AIM Project would not cross any of these developments, Project activities would not cause any direct conflicts or preclude the development of these projects. If a planned development's construction period overlaps with AIM Project construction, indirect impacts such as noise from construction activities, dust resulting from soil work, and traffic congestion would occur on a temporary basis. In the event of overlapping construction periods, Algonquin would continue to coordinate with the developer and permitting authorities to identify any potential conflicts associated with construction of the Project. Planned developments that would be crossed by the Project and may experience impacts are discussed in more detail below.

#### **Carlton Park, Jessup Valley, Jessup Valley North, and Stony Ridge Estates Residential Developments**

The proposed Project would cross portions of property associated with each of these four planned residential developments from about MPs 1.8 to 2.0 along the Haverstraw to Stony Point Take-up and Relay segment. This area is currently undeveloped forest land, and is surrounded by existing residential subdivisions. Lots in the Carlton Park and Stony Ridge Estates developments have been subdivided, but have not yet been sold, and no planned construction dates are currently available as they are pending sale of the lots. In the Jessup Valley and Jessup Valley North developments, the developer has applied for re-subdivision of the lots; planned construction dates are not currently available.

Lots on which residential construction could occur are located throughout the area, between 0 and 400 feet from the proposed Project workspace. Although construction dates are not known, if construction were to overlap, conflicts with residential development on these lots could occur on a temporary basis. However, no permanent impacts would occur because Algonquin would construct the replacement pipeline adjacent to its existing pipelines and within its existing permanent right-of-way, which already precludes the placement of structures over the right-of-way in this area. Algonquin would continue to coordinate with the developers and permitting authorities to identify and address any potential construction-related conflicts.

TABLE 4.8.3-1

**Planned Residential and Commercial Developments Within 0.25 Mile of the AIM Project**

Facility/County, State/ Municipality	Begin MP	End MP	Distance Crossed (feet) <sup>a</sup>	Distance and Direction from Nearest Point Along Construction Work Area	Planned Development, Description, Timing
<b>PIPELINE FACILITIES</b>					
<b>Haverstraw to Stony Point Take-up and Relay</b>					
Rockland County, NY					
Haverstraw	0.0	1.0	NA	At MP 0.6, site(s) are located east/ southeast from the work area approx. 250 feet.	Highgate Estates FM# 3727 – Residential development/ subdivision with empty lots for sale; no current construction. Construction date pursuant to the sale of the lots.
Stony Point	1.8	1.8	5 and 200	At MP 1.8, site(s) are located northwest from the work area approx. 0 to 400 feet.	Carlton Park FM #7742 – Residential development/subdivision. Construction date pursuant to the sale of the lot(s).
Stony Point	1.8	1.8	88 and 306	At MP 1.8, site(s) are located southeast from the work area approx. 0 to 300 feet.	Jessup Valley North FM #7991 – Residential development/subdivision; no current construction. Developer has applied for re-subdivision of lots; construction date unavailable.
Stony Point	1.8	1.8	20 and 100	At MP 1.8, site(s) are located southeast from the work area approx. 0 to 300 feet.	Jessup Valley FM # 7574 – Residential development/ subdivision; no current construction. Developer has applied for re-subdivision of lots into "Jessup Ridge."
Stony Point	1.8	2.0	875	At MP 2.0, site is bisected by the work area.	Stony Ridge Estates FM #7378 – Residential development/subdivision; no current construction. Construction date pursuant to the sale of the lots.
<b>Stony Point to Yorktown Take-up and Relay</b>					
Stony Point	3.0	3.0	NA	At MP 3.0, site is located southerly from the work area approx. 150 feet.	Tax ID 14.04 -1-12 – Historic designated schoolhouse; owned by the Town of Stony Point. Construction/renovation intermittent pending funding.
Stony Point	3.1	3.1	100	At MP 3.1, the AIM pipeline crosses the railroad tracks for 100 feet.	CSX – Approval for track rehabilitation and replacement has been received by CSX but no construction dates have been set.
Stony Point	3.3	3.3	30	Within the Hudson River bed at about MP 3.3.	Champlain Hudson Power Express Project – A proposed project by Transmission Developers, Inc. that would include a high- voltage direct-current line (running from Quebec to Astoria) within the bed of the Hudson River. A final EIS was issued for the proposed project in August 2014, and a Presidential Permit was issued in October 2014. The proposed project would cross the AIM Project pipeline alignment at about MP 3.3 within the Hudson River bed; however, no direct interaction would occur because the AIM Project pipeline would be installed beneath the river using the HDD construction method. Construction of the Champlain Hudson Power Express Project is anticipated to take place between late 2014 and 2017.

TABLE 4.8.3-1 (cont'd)

**Planned Residential and Commercial Developments Within 0.25 Mile of the AIM Project**

Facility/County, State/ Municipality	Begin MP	End MP	Distance Crossed (feet) <sup>a</sup>	Distance and Direction from Nearest Point Along Construction Work Area	Planned Development, Description, Timing
Westchester County, NY City of Peekskill	5.3	5.3	NA	At MP 5.3, site is located along railroad on Tract No. W-136; #WE-02550 in a northerly direction from the work area by approx. 250 feet.	Waste Transfer Facility – Per Mr. John Lynch of the City of Peekskill Planning Dept., a Waste Transfer Facility is planned by Kmmkm, Ltd. Once the facility is completed, waste would be downloaded from trucks to railcars. Owner has yet to commence construction of the said Transfer facility. It has been approved by the Planning Board of the City of Peekskill. No construction date has been filed; pending further permitting and approvals.
Cortlandt	7.6	7.6	NA	At MP 7.6, the site is located south of Tract #WE-03010 from the work area by approx. 350 feet.	Planned Subdivision – Per Asst. Dir. Of Code Enforcement for the Town of Cortlandt, Mr. Ken Hoch, a subdivision has been planned but the owner has failed to qualify to have it approved. No construction date available; pending subdivision approval.
Cortlandt	3.9	5.0	20	At MP 3.9 (9th Street), the new pipeline would cross the proposed transmission line. The transmission line would then run parallel to the pipeline at an offset of 50 feet.	West Point Transmission Project –WPP is proposing to construct a new transmission line from Leeds Substation in Athens to a substation located in Buchanan (Westchester County). The cable would be buried in the Hudson River for 74 miles and would then make landfall in the Hamlet of Verplanck, where it would be buried underground for about 1.5 miles before interconnecting with the existing Buchanan North Substation in the Village of Buchanan. WPP also proposes to construct a converter station that would occupy about 3.8 acres on a 105-acre parcel owned by Con Edison in the Hamlet of Verplanck located in the Town of Cortlandt. WPP filed an application with the New York State Public Service Commission in July 2013, and anticipates filing an amendment in early 2015. WPP also filed an application with the USACE in August 2013, and anticipates publication of public notice of the USACE application in 2014.
Cortlandt	9.8	9.8	NA	At MP 9.8, the site is located south of Tract #WE-04430 from the work area by approx. 0.25 mile.	Three-lot Subdivision – Per Asst. Dir. Of Code Enforcement for the Town of Cortlandt, Mr. Ken Hoch, a small three-lot subdivision has been approved by the Planning Board. No construction date has been filed.
<b>Southeast to MLV 19 Take-up and Relay</b>					
Fairfield County, CT City of Danbury	1.8	1.8	600	At MP 1.8, work area bisects northerly portion of the site.	Prindle Lane Center – Proposed new office building, restaurant, and hotel. No construction date has been filed.

TABLE 4.8.3-1 (cont'd)

**Planned Residential and Commercial Developments Within 0.25 Mile of the AIM Project**

Facility/County, State/ Municipality	Begin MP	End MP	Distance Crossed (feet) <sup>a</sup>	Distance and Direction from Nearest Point Along Construction Work Area	Planned Development, Description, Timing
<b>E-1 System Lateral Take-up and Relay</b>					
New London County, CT Lebanon	3.0	3.0	NA	At MP 3.0, site is located northerly from the work area approx. 25 feet.	Agricultural Field Reclamation/Pond Construction – Four- phase reclamation and pond construction on James Grover property. Construction is pending approval and permit from the USACE.
Franklin	7.0	7.5	2,400	Work area crosses the site.	Franklin Hills Estates and Country Club – Country Club and Golf Course/Houses. Clearing activities began January 2014.
Franklin	8.1	8.2	625	Work area crosses the parcel; the nearest proposed structure on the parcel is located southwesterly from the work area approx. 400 feet at MP 8.2.	395/2 Flex Center 6,600 sq. ft. multi-use commercial building – The construction of a multi-purpose commercial building and related site improvements on condominium Unit 2 of subject parcel. Construction dates not yet filed.
<b>E-1 System Lateral Loop Extension</b>					
New London County, CT Montville	1.0	1.0	20	At MP 1.0, site crosses the work area.	Access Easement/Driveway – Improvement of existing driveway for access to Cochegan Rock for the Mohegan Tribe of Indians of Connecticut. The driveway easement has been defined but no date has been set for construction.
<b>West Roxbury Lateral</b>					
Suffolk County, MA West Roxbury, Boston	3.6	3.6	NA	At MP 3.6, site is located easterly from the work area approx. 300 feet.	New 3-story Residential Development – To be located at 5165 Washington Street on the north side of the street, approx. 300 east of the intersection of Washington & Grove Street/300 east of MP 3.6. Proposal calls for the construction of a 27,000 square foot building comprised of 20 residential units in a 3-story structure and 32 parking spaces. Status: Board approved as of September 5, 2013. Construction date not yet available.
<b>ABOVEGROUND FACILITIES</b>					
<b>Guilford Metering and Regulating (M&amp;R) Station</b>					
New Haven County, CT Guilford	NA	NA	NA	500 feet southwest of work area.	Residential Units – Planned Revision, 2614 Boston Post Road. Township approved. No construction date has been filed.
Guilford	NA	NA	NA	240 feet southeast of work area.	Retail Store with Apartments Above – Planned Revision, 2496 Boston Post Road. Township approved. No construction date has been filed.

TABLE 4.8.3-1 (cont'd)

**Planned Residential and Commercial Developments Within 0.25 Mile of the AIM Project**

Facility/County, State/ Municipality	Begin MP	End MP	Distance Crossed (feet) <sup>a</sup>	Distance and Direction from Nearest Point Along Construction Work Area	Planned Development, Description, Timing
Guilford	NA	NA	NA	808 feet southeast of work area.	Retail – 2450 Boston Post Road. Planned retail store with 12 apartments to the rear of the building. Township approved. No construction date has been filed.
Guilford	NA	NA	NA	535 feet east of work area.	Retail – 2455 Boston Post Road. Planned retail with nine condo units and an office building on the side. Township approved. No construction date has been filed.
<b>Assonet M&amp;R Station</b> Bristol County, MA Freetown	NA	NA	NA	Abuts the property line on the east side.	New Massachusetts Bay Transportation Authority Station – A proposed Massachusetts Bay Transportation Authority Station to be located at 181 South Main Street in Freetown in immediate proximity to the Assonet M&R Station on parcels 233-023, 233-025, and 233-024. On September 16, 2013, the USACE released the final Environmental Impact Report with generally favorable findings. No construction date has been filed.
Freetown	NA	NA	NA	0.25 mile southwest of the meter station.	Interstate Waste Technology Co. Operating Facility – A high temperature gasifier facility to be located about 0.25 mile southwest of the Assonet M&R Station in Freetown. Interstate Waste Technology Co. proposes manufacturing alternative fuels (methanol, etc.) from salt, copper alloy, and other like materials. They have held an informal meeting with the planning board, although no formal application has been submitted as of September 27, 2013 and no public hearing has been held. The site is located in on parcel ID 233-030 on a site known locally as the Churchill & Banks parcel. Planning is still in early stages of development and permitting and no construction date has been filed.
<sup>a</sup> Where distance crossed is NA (not applicable), the Project would not cross the planned development but would be located within 0.25 mile.					

## **CSX Railroad Track Replacement**

The proposed Project would cross a railroad track owned by CSX Corporation at MP 3.0 along the Stony Point to Yorktown Take-up and Relay segment. The crossing would be about 100 feet in length. CSX has received approval to rehabilitate and replace this segment of railroad track, but no construction date has been set. Algonquin proposes to bore this railroad crossing, which would avoid direct impacts on the track and surrounding right-of-way. Therefore, the AIM Project would not preclude or conflict with CSX's ability to complete its proposed work. If construction of both projects were to overlap, indirect impacts such as increased traffic and noise from construction equipment and dust resulting from soil work would occur on a temporary basis. Algonquin would continue to coordinate with CSX and applicable authorities during the permitting of this crossing to identify and address any potential construction-related impacts.

## **Champlain Hudson Power Express Project**

The Champlain Hudson Power Express Project, a proposed electric transmission project by Transmission Developers, Inc., would include a high-voltage direct-current line installed in a 30-foot-wide corridor within the bed of the Hudson River. The alignment of Algonquin's proposed HDD of the Hudson River would cross this proposed transmission line at about MP 3.3. We received numerous comments indicating that the Commission had already authorized this project. To clarify, on July 1, 2010, the Commission authorized the *rates* associated with the Champlain Hudson Power Express Project. However, the Commission does not have jurisdiction over the *siting* of this Project. The New York State Public Service Commission (NYSPSC) has siting authority for the portion of the project in New York. The DOE released a final EIS on the Champlain Hudson Project in August 2014, and a Presidential Permit was issued by the DOE in October 2014. Transmission Developers, Inc. expects to construct the project between 2014 and 2017 but various federal and state permits are still pending. Although construction of both projects could overlap, Algonquin would avoid any in-water work as the proposed HDD would be staged from either side of the river and would place the pipeline far below the river bed. Therefore, the AIM Project would not directly preclude or conflict with the installation of the transmission line. However, indirect impacts such as increased traffic and noise from construction equipment would occur on a temporary basis if construction schedules were to overlap. Algonquin would coordinate with Transmission Developers, Inc. and permitting authorities to identify and address any potential construction-related impacts.

## **West Point Transmission Project**

The West Point Transmission Project is a proposed 1,000 MW underwater power cable proposed by WPP to bring untapped power from northern and western New York State to the New York City area. The proposed route begins in Athens, New York, and the cable would be buried below the bottom of the Hudson River for a distance of about 74 miles before making landfall in the Hamlet of Verplanck, New York. The cable would then be buried underground for about 1.5 miles before interconnecting with existing transmission facilities at the Buchanan North Substation in the Village of Buchanan, New York. WPP also proposes to construct a converter station that would occupy about 3.8 acres on a 105-acre parcel owned by Con Edison in the Hamlet of Verplanck. WPP has filed applications with the USACE and the NYSPSC. WPP anticipates filing an amendment to its NYSPSC application in early 2015.

The proposed route of the AIM Project's Stony Point to Yorktown Take-up and Relay segment also crosses the Hudson River onto the same Con Edison parcel in the Hamlet of Verplanck. Based on WPP's September 2014 filing before the NYSPSC, the AIM Project pipeline would cross the West Point Transmission Project's high-voltage direct-current cable route at MP 3.9 (9th Street). From this crossing, the transmission line would be parallel to the proposed AIM Project pipeline at an offset of 50 feet, as both projects proceed easterly toward the Con Edison parcel. At the Con Edison parcel, the AIM Project

pipeline would be located about 50 feet west of WPP's proposed converter station. North of the converter station, the West Point Transmission Project's transmission line would again run parallel to the proposed AIM Project pipeline for a distance of approximately 1,000 feet.

WPP modified its proposed transmission line alignment to closely parallel Algonquin's temporary construction workspace as described above, in order to reduce impacts on residential areas in the Hamlet of Verplanck. Algonquin and WPP would coordinate construction schedules to avoid overlap in construction activities on the Con Edison parcel. Algonquin anticipates that AIM Project pipeline construction would take place in 2015, with the Hudson River HDD crossing taking approximately four months to complete. Construction of WPP's transmission line in the Hamlet of Verplanck would take place after completion of Algonquin's construction activities. The modified transmission line alignment would allow a reduction in WPP's construction time period and construction impacts, because WPP could rely on construction workspace already cleared by Algonquin in the area where the projects parallel one another. While Algonquin has indicated that construction of the two projects on the Con Edison parcel would not overlap, the parcel is also large enough to accommodate both projects should the construction schedules change resulting in overlapping activities.

We have received several comments expressing safety concerns about potential interactions between Algonquin's proposed pipeline facilities and the WPP transmission line. A discussion of these safety concerns is provided in section 4.12.3.

#### **Prindle Lane Center**

The Prindle Lane Center is a proposed office building, restaurant, and hotel in the City of Danbury, Connecticut. The AIM Project would cross this property for about 600 feet at MP 1.8 along the Southeast to MLV 19 Take-up and Relay segment. No construction date is currently available for the Prindle Lane Center. It is possible that AIM Project construction could conflict with construction of these facilities. Although construction dates are not known, if construction were to overlap, conflicts with development at this site could occur on a temporary basis. However, Algonquin would construct the replacement pipeline adjacent to its existing pipelines and within its existing permanent right-of-way, which already precludes the placement of structures over the right-of-way in this area. Therefore, there would be no new permanent impacts on this development. Algonquin would continue to coordinate with the developers and permitting authorities to identify and address any potential construction-related impacts.

#### **Franklin Hills Estates and Country Club**

Franklin Hills Estates and Country Club is a development that includes a golf course, country club, and houses. Clearing activities for construction began in January 2014. The AIM Project would cross this property for about 2,400 feet from MPs 7.0 and 7.5 along the E-1 System Lateral Take-up and Relay segment. A projected completion date is not available for the estates and country club. Depending on the completion date, conflicts between the two projects could occur during construction. However, Algonquin would construct the replacement pipeline adjacent to its existing pipelines and within its existing permanent right-of-way, which already precludes the placement of structures over the right-of-way in this area. Therefore, there would be no new permanent impacts on this area. Algonquin would continue to coordinate with the developers and permitting authorities to identify and address any potential construction-related impacts.

#### **395/2 Flex Center Commercial Development**

The 395/2 Flex Center commercial development is a proposed multi-use commercial building in Franklin, Connecticut. The property is currently undeveloped and forested. The AIM Project would



cross this property for about 625 feet from MPs 8.1 to 8.2 along the E-1 System Lateral Take-up and Relay segment. The nearest proposed structure associated with the commercial development would be about 400 feet from the AIM Project workspace. A proposed construction date for the commercial development has not yet been filed. Although construction dates are not known, if construction were to overlap, conflicts with development on this property could occur on a temporary basis. However, Algonquin would construct the replacement pipeline adjacent to its existing pipelines and within its existing permanent right-of-way, which already precludes the placement of structures over the right-of-way in this area. Therefore, there would be no new permanent impacts on this development. Algonquin would continue to coordinate with the developers and permitting authorities to identify and address any potential construction-related conflicts.

### **Cochegan Rock Access Driveway**

The Mohegan Tribe of Indians plans to improve an existing driveway for access to Cochegan Rock, a sacred site owned by the tribe in Montville, Connecticut. The surrounding area is undeveloped and forested. The AIM Project would cross this driveway easement at about MP 1.0 on the E-1 System Lateral Loop Extension. No date has been set for construction. Although construction dates are not known, if construction were to overlap, conflicts with improvements to the existing driveway could occur on a temporary basis. However, there would be no new permanent impacts because the pipeline would be installed beneath the driveway and the driveway could continue to be used following installation of the pipeline. Algonquin would continue to coordinate with the tribe and permitting authorities to identify and address any potential construction-related conflicts.

### **4.8.4 Coastal Zone Management**

In 1972, Congress passed the CZMA to “preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation’s coastal zone for this and succeeding generations” and to “encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone” (16 USC 1452, Section 303 (1) and (2)).

Section 307 (c)(3)(A) of the CZMA states that “any applicant for a required federal license or permit to conduct an activity, in or outside the coastal zone, affecting any land or water use or natural resource of the coastal zone of that state shall provide a certification that the proposed activity complies with the enforceable policies of the state’s approved program and that such activity will be conducted in a manner consistent with the program.” In order to participate in the CZMP, a state is required to prepare a program management plan for approval by the NOAA, Office of Ocean and Coastal Resource Management (OCRM). Once the OCRM has approved a state’s plan, including its enforceable program policies, the state program gains “federal consistency” jurisdiction. This means that any federal action (e.g., a project requiring federally issued licenses or permits) that takes place within the state’s coastal zone must be found to be consistent with state coastal policies before the action can take place.

Portions of the AIM Project are subject to a federal Coastal Zone Consistency Review because it would: 1) involve activities within the coastal zones of New York and Massachusetts; and 2) require several federal permits and approvals (see table 1.5-1). The Project would not be located within the coastal zones of Connecticut or Rhode Island. New York and Massachusetts have approved CZMPs administered by the NYSDOS and the MAEOEEA, respectively. A description of each state’s program, the applicable Project activities, and information provided by Algonquin regarding consistency of the Project with state policies is provided below.

#### **4.8.4.1 New York**

The NYSDOS, through the Division of Coastal Resources, is the lead agency responsible for administering the State's Waterfront Revitalization and Coastal Resources Act, Section 919, as approved by NOAA in 1982. This act provides the NYSDOS with the authority to establish a coastal management program, develop coastal policies, define the coastal boundaries, and establish state consistency requirements. The New York Coastal Management Program requires actions within the coastal zone to be consistent with the state's coastal area policies or a state-approved Local Waterfront Revitalization Program (LWRP). A LWRP is a refinement of the state's coastal policies, developed jointly by the state and a municipality.

The Stony Point to Yorktown Take-up and Relay segment crosses the coastal zone management area associated with the Hudson River in the Town of Stony Point and in the City of Peekskill. Both the Town of Stony Point and the City of Peekskill have approved LWRPs from the NYSDOS that refines and supplements the State's Coastal Management Program. The Town of Stony Point's LWRP was approved in 1994 and the City of Peekskill's LWRP was approved in 2004 (Town of Stony Point, 1994; City of Peekskill, 2004).

Algonquin plans to cross the Hudson River using the HDD method to avoid impacts on aquatic resources and potential impacts on critical environmental areas (CEA). Algonquin filed its consistency assessment application with the NYSDOS on February 27, 2014. In its application, Algonquin described how the AIM Project would be consistent with each of the applicable state coastal policies, as well as with the applicable additional policies of the Stony Point and Peekskill LWRPs. On September 2, 2014, the NYSDOS concurred with Algonquin's consistency certification (NYSDOS, 2014a). On October 21, 2014, Algonquin notified the NYSDOS of changes to the proposed pipeline route and workspaces at the Hudson River crossing (as described in section 3.5). The NYSDOS confirmed that the September 2 consistency determination remains valid for the current proposed alignment of the Project (NYSDOS, 2014b).

#### **4.8.4.2 Massachusetts**

The MACZM, within the MAEOEEA, is the lead agency for administering the Massachusetts Coastal Zone Management Plan, as approved by NOAA in 1978 and updated through subsequent filings. This plan provides MACZM with the authority to review federal projects affecting the Massachusetts coast to ensure consistency with state policies (MACZM, 2014).

The proposed new Assonet M&R Station would be located within the Massachusetts coastal zone. However, on February 6, 2014, MACZM determined that due to the limited nature of the work at this site, the Project falls below the threshold requiring federal consistency review.

#### **4.8.5 Public Land, Recreation, and Other Special Interest Areas**

USGS topographic maps; aerial photographs; correspondence with federal, state, and local agencies; field reconnaissance; and internet searches were used to identify parks, recreation areas, scenic areas, and other designated or special interest areas at the federal, state, and local level in the vicinity of the proposed Project facilities. The areas that would be crossed by the Project or that would be within 0.25 mile of the construction right-of-way are listed in table P-1 in appendix P.

During pipeline construction within 0.25 mile of the areas identified in P-1 in appendix P, impacts associated with increased traffic, noise, and dust, as well as impacts on visual resources, could occur; however, these impacts would be temporary and limited to the time of construction. Visual

impacts on recreation and special interest areas within 0.25 mile of existing aboveground facilities where modifications would occur would be similar to those already experienced.

One of the primary concerns when crossing recreation and special interest areas is the impact of construction on the recreational activities, public access, and resources the area aims to protect. Construction would alter visual aesthetics by removing existing vegetation and disturbing soils. Construction would also generate dust and noise, which could be a nuisance to recreational users, and may interfere with or diminish the quality of the recreational experience by affecting wildlife movements or disturbing trails.

In general, Project impacts on recreational and special interest areas occurring outside of forest land would be temporary and limited to the period of active construction, which typically lasts several weeks or months in any one area. These impacts would be minimized by implementing the measures in Algonquin's E&SCP. Traffic-related impacts would be minimized through implementation of the measures in Algonquin's traffic management plans (see section 4.9.5). Noise mitigation measures that would be employed during construction include ensuring that the sound muffling devices, which are provided as standard equipment by the construction equipment manufacturer, are kept in good working order. To control fugitive dust during construction, Algonquin would apply water or other commercially available dust control agents on unpaved areas subject to frequent vehicle traffic. In addition, we have recommended that Algonquin develop and implement a Dust Control Plan that specifies the mitigation measures to be used for dust abatement (see section 4.11.1).

Following construction, most open land uses would be allowed to revert to their former uses. Forest land affected by the temporary construction right-of-way and ATWS areas, however, would experience long-term impacts because of the time required to restore the woody vegetation to its preconstruction condition. Further, forest land within the new permanent right-of-way would experience permanent impacts because it would be precluded from being reestablished within the maintained portion of the right-of-way. Algonquin would construct the majority of the Project adjacent to its existing pipelines within its existing permanent right-of-way or largely overlapping its existing permanent right-of-way, or within or adjacent to existing roadways. Therefore, most of the recreational and public interest areas crossed would not be further impacted during operation of the Project.

Implementation of the measures discussed above would minimize or eliminate impacts on most of the public lands, recreation, and other public interest areas identified in P-1 in appendix P. We do not believe the Project would result in significant impacts on these areas. Areas requiring additional site-specific considerations are discussed in detail below by state.

#### **4.8.5.1 New York**

##### **Harriman State Park**

Harriman State Park is the second largest park in the New York State Parks system, located in Rockland and Orange Counties and managed by the PIPC. The park, at 46,613 acres, holds 31 lakes and ponds; over 200 miles of trails; and a number of recreation areas for camping, swimming, and hiking (New York State Parks, 2013). On its northeastern edge, Harriman State Park borders the 5,000-acre Bear Mountain State Park as well as the United States Military Academy's 16,000-acre forest reserve. Additionally, 18.8 miles of the Appalachian Trail are within the park.

The Project pipeline facilities would cross Harriman State Park in two locations in Rockland County, on the existing right-of-way from about MPs 0.0 to 0.3 in the Town of Haverstraw along the Haverstraw to Stony Point Take-up and Relay segment, and from about MPs 2.5 to 2.6 in the Town of Stony Point (Hamlet of Tomkins Cove) along the Stony Point to Yorktown Take-up and Relay segment.

A total of about 4.5 acres of temporary construction workspace would be required for the construction of the pipeline facilities crossing Harriman State Park. This area consists of forested land that would be cleared for Project construction. Of the 4.5 acres of temporary construction workspace, 2.5 acres would consist of existing permanent right-of-way. Algonquin met with the Executive Director of the PIPC on January 8, 2014, and determined that the land use where the pipeline would cross the park is passive recreation with no active trails or public facilities.

No new permanent right-of-way would be added in Harriman State Park; therefore, any impacts would be temporary and limited to the construction period. Although temporary, impacts as a result of tree clearing would be long term. Construction would take place during the summer months of 2016, when recreational use of the park would be at a peak. However, no active public facilities are located in the Project area so there would be no direct impacts on recreational use of the park during construction. Any interaction with the public during construction would be mitigated with appropriate monitoring, use of safety devices, and signage. As part of its easement negotiations, Algonquin has agreed to complete a tree inventory and utilize erosion and sediment control procedures during construction. We have also recommended that Algonquin provide us with any additional avoidance and mitigation measures developed in consultation with NYSOPRHP and PIPC (see section 4.6.1.5).

### **Cheesecote Mountain Town Park**

Cheesecote Mountain Town Park is owned by the Town of Haverstraw and contains 217 acres of land and a 6-acre pond (Cheesecote Reservoir). The park is open to the general public daily from April 1 through October 31st (Town of Haverstraw, 2014). The construction right-of-way associated with the Haverstraw to Stony Point Take-up and Relay segment of the Project would be located on town-owned property on Cheesecote Mountain, but would be about 0.4 mile west of the town park itself. The park is accessed from Willow Grove Road in the Town of Haverstraw, about 0.5 mile from the construction right-of-way. The portion of town property that would be crossed by the Project is not a designated public recreational area, and is not used for recreational or access purposes. Therefore, although Project construction would occur during the park's open season in 2016, construction would not have an impact park use or access. Temporary visual impacts associated with construction would be consistent with the existing visual character of the area, because an existing overhead transmission line occupies the same area as the Project right-of-way.

### **Letchworth Village Cemetery**

The Letchworth Village Cemetery is located in the Town of Haverstraw and owned by the State of New York and has been previously determined eligible for listing in the NRHP by the New York SHPO. The Project would cross a portion of open area within the cemetery on existing right-of-way at approximate MP 0.8 along the Haverstraw to Stony Point Take-up and Relay segment.

The AIM Project would not have any permanent impacts on land use within the cemetery because the replacement pipeline would be located within Algonquin's existing permanent right-of-way, which already crosses the cemetery property. During the construction period, visits to the historic cemetery would be temporarily impacted by construction noise and dust. Letchworth Village Cemetery has been determined eligible for the NRHP. The boundaries for this resource will be delineated and avoided (see section 4.10.1). Algonquin must file documentation that it has completed NHPA section 106 consultation with the New York SHPO before construction could begin (see section 4.10.5).

### **Camp Bullowa**

Camp Bullowa is a private facility owned by the Hudson Valley Council of the Boy Scouts of America. The camp consists of about 300 acres of fields and trails that serve local youth through Boy

Scout programs. Activities within the camp include a shooting sports area and fishing and boating on Lake Boyce (Hudson Valley Council, 2010). The camp is available for use year-round by Boy Scout units and outside groups.

The Stony Point to Yorktown Take-up and Relay segment of the Project would cross Camp Bullowa on existing right-of-way for a distance of about 0.6 mile, from MPs 0.7 to 1.3. The entrance to the camp is located off Franck Road, immediately adjacent to the existing right-of-way. The portion of the camp that would be crossed by the Project is about 200 feet north of the camp recreation area, and is also occupied by an existing high-tension power line.

Project construction would occur during the summer of 2016; therefore it is likely that the camp could be in use during construction. Temporary construction noise, dust, and traffic would be the primary impacts associated with construction within Camp Bullowa. Impacts on the camp would be mitigated with appropriate monitoring, safety devices, and signage. Algonquin has committed to continue coordinating with the Hudson Valley Council of the Boy Scouts to address any specific concerns and ensure the safety of all scouting members at the camp.

### **Simpson Memorial Church**

Simpson Memorial Church, Inc. is a property in the Hamlet of Tompkins Cove with land use classified as Institutional Quasi Public (Rockland County Planning Department, 2013). The Stony Point to Yorktown Take-up and Relay segment of the Project would cross this property between MPs 2.8 and 3.0. A new easement would be required for this crossing.

The crossing of the church property would be located entirely along a wooded area. There is no church structure in this area, and the area is not used for church or recreational functions. Therefore, there would be no direct impact on public use of the property. Temporary noise, dust, and traffic impacts would occur during construction, but these impacts would be minimized by screening from the surrounding wooded area in addition to the general measures identified above.

### **Washington-Rochambeau National Historic Trail (New York Portion)**

The Washington-Rochambeau National Historic Trail (NHT) is managed by the National Park Service (NPS) and covers over 680 miles of land and water used by General Washington and General Rochambeau during the siege of Yorktown in the War of Independence. This trail crosses major rivers, metropolitan areas, state parks, and rural and suburban communities from Virginia to Massachusetts. The NHT also follows many roads that have been in existence since the 18th century (NPS, 2014a).

In New York, the Project would cross the NHT at one location in Stony Point and three locations in Cortlandt. The points crossed are all on existing paved public roadways that have been designated as part of the NHT: Route 9W/202-N. Liberty Drive (MP 3.0), Broadway Street (MP 4.8), Route 9A (MP 5.8), and Route 9 (MP 5.9). Algonquin has consulted with the NPS, and the NPS indicated that they do not have any concerns regarding the proposed Project. Algonquin also met with the New York State Department of Transportation (NYSDOT) on April 17, 2014, and NYSDOT personnel indicated that they do not foresee any conflict with the NHT or any need for additional mitigation measures, since the NHT is along paved roads and the Project would not alter the existing road use. Because the NHT is collocated with modern paved roads at these points, the Project would not have any impact on the recreational use or aesthetic character of the NHT.

## St. Patrick's Church

St. Patrick's Church is located in the Hamlet of Verplanck with land use classified as Institutional Quasi Public (Westchester County, 2009). The Stony Point to Yorktown Take-up and Relay segment of would cross this property at MP 4.1. A new easement would be required for this crossing as it is in the portion of this pipeline segment that deviates from Algonquin's existing right-of-way. In addition, the ATWS associated with the pullback area of the Hudson River HDD would be located on the property.

The workspace associated with the Project would be located partially within two parking lots associated with the church. One of the lots is accessed from 11th Street and includes a small paved parking area near its entrance, with a larger unpaved area extending to the northeast. The other lot is accessed from Highland Avenue and is unpaved. Project activities would not affect access to the two parking lots, and would not affect the availability of on-street parking near the church. However, Project workspaces would be located on large portions of the unpaved areas within both parking lots, as well as on a small portion of the paved area within the 11th Street lot. Church officials have indicated that most parishioners use on-street parking; nonetheless Project construction would temporarily reduce the area available for off-street parking near the church.

We received a comment from the Administrator of St. Patrick's Church noting that, in addition to weekend masses, the church conducts weddings, baptisms, funerals, and holiday services throughout the week, as well as holding 9:00 a.m. masses each Monday, Tuesday, Wednesday, and Friday. Algonquin has agreed to avoid construction activities during weekend services, thereby reducing some impacts on church activities during construction. However, during weekday functions the church would experience temporary impacts from construction noise, dust, and traffic, similar to those impacts experienced by other landowners and businesses in the Project area. As noted above, Project construction would also temporarily reduce the availability of off-street parking. After construction, the parking lots would be returned to their prior use; therefore, there would be no permanent impacts associated with the new easement. To ensure that impacts on St. Patrick's Church are further minimized, **we recommend that:**

- **Prior to the construction of the Stony Point to Yorktown Take-up and Relay segment, Algonquin should file with the Secretary, for review and written approval of the Director of OEP, a revised site-specific construction plan for St. Patrick's Church. The plan should include:**
  - a. **a detailed schedule for construction activities within the HDD pullback area located on church property (i.e., month(s), week(s), days of the week, and hours of the day);**
  - b. **in addition to avoiding construction activities during weekend services, avoidance of construction activities during the morning masses held at 9:00 a.m. each Monday, Tuesday, Wednesday, and Friday;**
  - c. **provisions for an alternate parking area and/or shuttle service for use by parishioners during the time the church's parking areas are disrupted by construction activities; and**
  - d. **restoration of the church's parking areas to their preconstruction condition immediately following completion of construction activities in the HDD pullback area.**

While we recognize that events such as weddings, baptisms, and funerals may take place on weekdays in addition to morning masses, we do not believe that it is reasonable to avoid all such events, because they do not occur on a regular schedule. We conclude that the measures identified above, including our additional recommendation, are sufficient to minimize impacts on St. Patrick's Church to less than significant levels.

### **Indian Point Energy Center**

The IPEC is a nuclear powered generating facility owned by Entergy in the Village of Buchanan, New York. Algonquin's existing pipeline right-of-way crosses through the IPEC property on the east side of the Hudson River Crossing. The Stony Point to Yorktown Take-up and Relay segment of the Project would be located south of the existing right-of-way but would still include construction right-of-way within the IPEC facility property, and the east side of Algonquin's proposed HDD crossing of the Hudson River would include a staging area located on the IPEC property. The Project would cross the IPEC property for a total of 2,159 feet from about MPs 4.4 to 4.9. The Project would require about 2.4 acres of new permanent easement on the IPEC property, along with 1.9 acres of temporary workspace. The IPEC lands that would be crossed by the Project are located over 1,600 feet from the power plant structures, with other road, parking, and industrial/commercial land uses in between. The proposed AIM Project alignment within the IPEC property would be located outside the facility's primary security zone.

We received a comment from the New York State Attorney General's Office stating that Algonquin's pipeline is near a potential location for a closed-cycle cooling system for Indian Point Unit 3, and citing concerns that the pipeline could impede the construction of such a cooling system. This concern refers to Algonquin's existing pipelines on the IPEC property, immediately south of the IPEC security barrier. The proposed route would be located about 0.5 mile south of the IPEC security barrier, and would not impact construction of a closed-cycle cooling tower. Algonquin stated that Entergy, during consultation on May 16, 2014, has agreed that the proposed southern route for the AIM pipeline would not interfere with future plans to construct closed-cycle cooling towers.

We also received several comments expressing safety concerns about the proximity of the AIM Project facilities to the IPEC nuclear facilities. Algonquin engaged in ongoing consultation with Entergy regarding the proposed AIM Project, and has committed to enhanced mitigation measures for the portion of the proposed pipeline near IPEC (see section 4.12.3). Entergy filed a Safety Evaluation for the AIM Project with the NRC in August 2014, and has concluded that the AIM project would pose no increased risks to IPEC and that there would be no significant reduction in the margin of safety. The NRC conducted an independent analysis of Entergy's finding and concurs with Entergy's conclusions (NRC, 2014b). Algonquin would coordinate all construction activities at this site with Entergy's IPEC site manager. See section 4.12.3 for additional discussion of safety-related concerns associated with the IPEC facility.

### **Buchanan-Verplanck Elementary School**

The Buchanan-Verplanck Elementary School is a public elementary school serving about 300 students in Westchester County. The Stony Point to Yorktown Take-up and Relay segment of the AIM Project would be located adjacent to the back portion of the school property between MPs 4.9 and 5.0. The Project construction right-of-way and workspace would be located about 450 feet away from the school facility itself at its closest point. The area between the school and the proposed Project workspace is densely wooded, and a natural berm separates the school from the proposed pipeline route.

Noise and dust generated by the construction activities could temporarily impact the school and related school activities. To minimize these impacts, Algonquin would attempt to complete construction

while school is not in session (i.e., the summer). However, as discussed in sections 4.7.1.2 and 4.7.1.3, Algonquin has also committed to adhering to the FWS-recommended tree clearing restriction window for Indiana and northern long-eared bats (April 1 to September 31) within a 5- and 3-mile radius, respectively, of each identified bat location (Indiana bat) or accepted home range of the species (northern long-eared bat). These 3- to 5-mile buffers overlap the area around the Buchanan-Verplanck Elementary School. As a result, tree clearing in this area needs to occur between October 1 and March 31 when the bats are in hibernation. If the Project is approved and tree clearing cannot occur before March 31, construction near the school could be delayed until the fall, overlapping with the school year.

To further minimize impacts regardless of when construction would occur, Algonquin has committed to avoiding rock blasting in this area, which would minimize noise impacts associated with construction. The intervening wooded land and natural berm would also provide a buffer to visual, noise, and dust impacts associated with construction activities. In addition, Algonquin has agreed to additional design and installation enhancements for construction and operation near the IPEC facility, which it would also apply to the portion of the proposed pipeline near the school (see section 4.12.3). Therefore, we conclude that impacts on Buchanan-Verplanck Elementary School during both construction and operation would be sufficiently minimized.

### **Village Park (Village of Buchanan)**

This Village Park, owned by the Town of Cortlandt Manor – Village of Buchanan, is a municipal park about 43 acres in size. According to the County of Westchester Department of Planning, the land use within the park is classified as open space designated for municipal and park purposes (Westchester County, 2014a). The Stony Point to Yorktown Take-up and Relay segment of the Project would cross the park at about MP 5.1.

The Project would cross this park for about 313 feet along a wooded area at the back of the property. This area is about 165 feet from the portion of the property used for public recreation. Construction activities would be completed within a few months between March and October 2015, which coincides with the recreation season. The intervening woodland would provide a visual buffer during project construction; however, temporary construction noise and dust impacts could still occur. A new easement would be required for construction and operation of the pipeline as it falls within the portion of this segment that deviates from Algonquin's existing right-of-way. However, the right-of-way would not preclude use of the park. Algonquin has committed to coordinating with the Town of Cortlandt (the landowner for the Village Park) regarding the proposed crossing of this park.

### **Blue Mountain Reservation**

The Blue Mountain Reservation is a 1,538-acre park located in the Town of Cortlandt, New York, and managed by Westchester County. The reservation is characterized by steep topography, rugged terrain, and the wide presence of exposed bedrock. The reservation offers trails for hiking, biking, and horseback riding, including the two peaks of Blue Mountain and Mt. Spitzenberg (Westchester County, 2014b). The Stony Point to Yorktown Take-up and Relay segment of the AIM Project would cross the Blue Mountain Reservation from about MPs 6.7 to 8.1 and again between MPs 8.4 and 8.5.

The new 42-inch-diameter pipeline would replace the existing 26-inch diameter pipeline within a 6-foot-wide permanent easement granted in 1952 by the Westchester County Park Commission and the Westchester County Board of Supervisors. That easement also provides for a 75-foot-wide maintenance easement. The new pipeline would be installed in the same trench as the existing pipeline to be removed. Upon completion of construction, Algonquin would file and record as-built drawings with the county. A total of about 18.8 acres of temporary construction workspace would be required within the Blue Mountain Reservation for construction of the AIM Project. This area consists of forested land that would



be cleared for construction activities. Of the 18.8 acres of temporary workspace, 1.1 acres would be within existing permanent right-of-way. No new permanent right-of-way would be added within the reservation. The AIM Project would require ATWS outside the existing 75-foot-wide maintenance easement within the Blue Mountain Reservation for up to a 6-month period; the total temporary construction right-of-way would generally be 100 feet wide.

Construction noise, dust, tree clearing, and traffic would temporarily impact the Blue Mountain Reservation during Project construction. Construction in the reservation is expected to occur between March 2016 and October 2016; Algonquin would inform the public prior to commencement of construction activities once a more specific construction schedule is determined. Algonquin would also implement the measures in its E&SCP to minimize impacts on the area. Surrounding woodland would largely screen visual impacts on recreational/aesthetic use of the reservation. After construction, all impacted areas within the Reservation would be returned to their preexisting use, and although long-term temporary impacts would occur as a result of tree clearing, no permanent impacts would occur.

We received comments regarding the need to minimize construction impacts and protect the recreational use and aesthetic character of the park. On January 28, 2014, Algonquin met with Westchester County officials to address specific issues related to construction of the pipeline through the reservation and continued operation of Algonquin's facilities, and to request approval for additional workspace from the county. As mitigation for crossing the reservation, Algonquin would pay rent to Westchester County for its ATWS, and would pay compensation for trees removed along the right-of-way.

We evaluated a route variation within the Blue Mountain Reservation as a result of comments on the draft EIS. The variation would have shifted the pipeline alignment about 100 feet to the north. However, because there is another utility corridor abutting the north side of Algonquin's existing right-of-way at this location, the variation would have needed to cross this utility corridor twice, once to put the proposed pipeline north of the corridor and then a second time to return to the proposed alignment after passing by the pond. These crossings of the existing utility corridor and the new right-of-way resulting from the shift would increase the amount of temporary and permanent workspace and land disturbance as well as the amount of temporary and permanent forest clearing that would be needed to install the pipeline. Therefore, we do not recommend its incorporation into the proposed route (see section 3.5.2.1).

Although long-term impacts associated with tree clearing would occur, overall impacts on the area would be minimized by installing the pipeline within Algonquin's existing permanent easement. Therefore, we conclude that impacts on the Blue Mountain Reservation would be sufficiently minimized.

### **New York City Catskill Aqueduct**

The New York City Catskill Aqueduct channels New York City's water supply system from the Catskill/Delaware Watersheds. The Stony Point to Yorktown Take-up and Relay segment of the AIM Project would cross the Catskill Aqueduct at about MP 10.3 on Croton Avenue near the Cortlandt M&R Station. The NYCDEP manages this aqueduct.

The 26-inch-diameter pipeline and casing pipe that crosses the aqueduct would be removed (although Algonquin would not disturb the existing protective concrete slab pending concurrence from the NYCDEP) and the 42-inch-diameter pipeline would be installed within a new casing pipe above the aqueduct. As with the existing pipeline, the new pipeline would be located above the aqueduct and would rest on concrete pads to provide adequate separation and protection for the aqueduct pipe. The new pipeline segment would be located 50 feet to the south of the existing 26-inch-diameter pipeline (see section 3.5.2.1), placing the new 42-inch-diameter pipeline at the edge of the area permitted by Algonquin's existing Land Use Permit from NYCDEP. The new pipeline would require additional

permitted right-of-way and temporary construction workspace. The measures that would be implemented at this crossing are described in section 4.3.2.1. Algonquin continues to consult with the NYCDEP regarding this crossing. We have recommended that Algonquin provide a final site-specific crossing plan for the aqueduct prior to construction (see section 4.3.2.1).

### **Sylvan Glen Park Preserve and Granite Knolls Park West**

The Sylvan Glen Park Preserve and Granite Knolls Park West are adjacent parks located west of Stony Street and east of Lexington Avenue in the Town of Yorktown. The preserve is the site of a former quarry that supplied honey-colored granite for the approaches to the George Washington and Whitestone bridges. The parks contain 5.0 miles of trails used for hiking and dog walking and are open year-round. Old cables, discarded slabs of granite, and an explosive shed are a few of the remnants along the trails in the parks (New York–New Jersey Trail Conference, 2014).

The Stony Point to Yorktown Take-up and Relay segment of the Project crosses parcels within the Sylvan Glen Park Preserve and Granite Knolls West terminating at the west side of Stony Street. The crossings would occur on existing right-of-way for a total distance of about 1.2 miles, from about MPs 11.0 to 11.8 (with a short separation where the pipeline leaves the park property) and MPs 11.9 to 12.3. A new launcher/receiver and pressure regulating facility would be constructed and operated at MP 12.3 on a parcel within Granite Knolls West.

In 1952, Loyola Seminary granted Algonquin a 50-foot-wide permanent easement for a pipeline and appurtenant facilities under and upon the land in what is now the Sylvan Glen Park Preserve. The Town of Yorktown acquired the Loyola Seminary property in 1981 for park purposes. The conversion to a park use did not extinguish Algonquin's existing easement. The AIM Project replacement pipeline and new launcher/receiver and pressure regulator facility would be installed within the existing permanent easement. However, construction would require the clearing of a strip of mostly upland forest between 30 to 40 feet wide on the north side of the existing right-of-way. Some additional tree clearing would be required for a roughly 350- by 85-foot extra workspace on the west side of Stony Street and for nine ATWSs, roughly 100 feet by 35 feet, throughout the parks. The installation of the launcher/receiver facility on the west side of Stony Street would also introduce a new, low profile visual impact in a viewshed otherwise unaffected by aboveground ground structures. The launcher/receiver facility may be visible to passing motorist and pedestrians on or adjacent to Stony Street. Also, Algonquin is no longer proposing to use a contractor ware yard within the Granite Knolls Park West.

The Town of Yorktown identified two hiking trails (High Quarry and Turtle Pond trails) that it wished to remain open during Project construction, and a historic lime kiln that it expects the New York SHPO would want maintained rather than demolished. We also received a scoping comment expressing concern about damage to this kiln. Phase II archaeological evaluation is in progress for this site (see section 4.10.1).

Construction activities, noise, and dust would impact recreational use of this area. Algonquin would place timber mats over the High Quarry and Turtle Pond trails, as requested by the town, in order to keep them open during construction. Algonquin would mitigate construction impacts by installing safety fencing around excavations left overnight, installing signage, and watering regularly to control fugitive dust. After the construction period, Algonquin would return the construction area to its preexisting use. The new launcher/receiver facility would have a minor but permanent impact on the visual character of the parcel of Granite Knolls West where it would be installed. There would be no other permanent impacts on Sylvan Glen or Granite Knolls West; however, the impacts associated with the tree clearing would be long term. Cultural surveys for this location are pending. Per our recommendation, Algonquin would file documentation that it has completed NHPA section 106 consultation with the New York SHPO before construction could begin (see section 4.10.5).

## **New York Critical Environmental Areas**

In New York State, local agencies may designate specific geographic areas within their boundaries as CEAs. State agencies may also designate geographic areas they own, manage, or regulate. To be designated as a CEA, an area must have an exceptional or unique character with respect to one or more of the following:

- a benefit or threat to human health;
- a natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space and areas of important aesthetic or scenic quality);
- agricultural, social, cultural, historic, archaeological, recreational, or educational values; or
- an inherent ecological, geological, or hydrological sensitivity to change that may be adversely affected by any change.

Algonquin identified two CEAs that would be crossed by the AIM Project (NYSDEC, 2014b):

- Hudson River CEA: The Stony Point to Yorktown Take-up and Relay segment in Westchester County would cross the Hudson River from MPs 3.0 to 3.8. This area is designated as a CEA. The Project would cross the Hudson River using the HDD method to avoid impacts on the CEA. Specifically, the crossing would be south of the Hudson River Mile 44-56 habitat, and avoid the Iona Island and Haverstraw Bay Significant Coastal Fish and Wildlife Habitats located to the north and south, respectively. The Project would also avoid the Hudson Highlands State Park Preserve, which lies within the coastal zone north of the Project. Therefore, no impacts on these areas would occur.
- County and State Park Lands CEA: The Stony Point to Yorktown Take-up and Relay segment of the Project would cross this CEA from MPs 6.7 to 8.1 and again from MPs 8.4 to 8.5. This CEA area is associated with the Blue Mountain Reservation (see the discussion of the Blue Mountain Reservation above).

## **State of New York Parkland Alienation**

In New York, the Public Trust Doctrine requires state legislative approval when there is a “substantial intrusion on parkland for non-park purposes, regardless of whether there has been an outright conveyance of title and regardless of whether the parkland is ultimately to be restored” (Friends of Van Cortlandt Park v. City of New York, 2001). Therefore, municipalities proposing to permit a non-park use on parkland must seek approval from the New York State Legislature, a process called “alienation of parkland.” New York courts, nonetheless, have recognized that there are de minimis exceptions to the Public Trust Doctrine that have a time and area component. In particular, minor uses of parkland for non-park purposes that do not interfere with public use do not require legislative approval (Hand v. Hospital for Special Surgery, 2012; Roosevelt Island Residents Assoc. v. Roosevelt Island Operation Corp., 2005). In addition, construction projects of less than 1 year generally do not constitute alienations, particularly when park uses can continue to go on around the construction (Hand v. Hospital for Special Surgery, 2012; Powell v. City of New York, 2011).

As discussed above, the AIM Project would cross the Blue Mountain Reservation, the Sylvan Glen Park Preserve, Cheesecote Mountain, and a Village Park in the Village of Buchanan. With regard to state parks or other lands owned by New York State agencies, such as the crossing in Harriman State

Park, Rockland County, alienation is not triggered. New York State's parkland law authorizes state agencies to approve easements and licenses in parkland for utilities serving a public purpose (N.Y. Parks & Hist. Pres. L. §13.06).

The AIM Project replacement pipeline would be located underground and thus would not permanently affect the use of the surface land for park purposes in the parks that would be crossed by the Project. The construction period within each individual park would be less than 1 year. We note that the Commission has jurisdiction for federal projects regarding the authorization of siting interstate natural gas facilities under the NGA. Each state or local park management agency would decide whether to seek alienation for the proposed activities on their lands. We do not express an opinion as to whether legislative parkland alienation should be sought by these agencies. However, if the Project is approved by the Commission, the alienation process could not prohibit or unreasonably delay its construction.<sup>3</sup>

#### **4.8.5.2 Connecticut**

##### **Ridgewood Country Club**

Ridgewood Country Club is a private 18-hole golf course located on Franklin Street just north of Interstate 84 in the City of Danbury (Ridgewood Country Club, 2013). The club is owned by Ridgewood County Club, Inc. and offers golf, recreational (tennis and swimming), and dining memberships. A pro golf shop is also located on-site as well as a banquet, patio, garden room, and grill room. The club's season is May through September with June, July, and August being the most active months for the club. The Southeast to MLV 19 Take-up and Relay segment of the Project would border the northeastern side of the Ridgewood Country Club property and cross a small portion of it on existing right-of-way at the northern tip between Franklin Street Extension (MP 3.9) and Kohanza Street (MP 4.2). The portion of the Club property that would be crossed includes part of the golf course.

In October 2013, Algonquin met with the General Manager of the club to discuss the proposed Project and any concerns the club may have. In a letter to the Commission dated October 24, 2013, the club requested that Algonquin schedule the proposed work between October 2015 and April 2016 because this is their off-season and would cause the least interruption. Algonquin has agreed to this timeframe. Therefore, there would be no significant impacts on the Ridgewood Country Club, as temporary construction impacts would be restricted to the club's off-season and there would be no new permanent easement.

##### **Trumbull Cemetery**

The Trumbull Cemetery is located in the Town of Lebanon and managed by the Town of Lebanon Historical Society Museum and Visitor Center. It contains many historic headstones and notable graves, including Revolutionary War Governor John Trumbull and William Williams, a signer of the Declaration of Independence (Town of Lebanon, 2014). The E-1 System Lateral Take-up and Relay segment of the AIM Project would be adjacent to the cemetery property for about 400 feet at MP 1.9. This cemetery is listed in the Connecticut State Register of Historic Places and would be avoided (see section 4.10.1).

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<sup>3</sup> See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Commission*, 894 F.2d 571 (2d Cir. 1990); and *Iroquois Gas Transmission System, L.P., et al.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

## **Aspinall Recreation Complex and Lebanon Elementary School**

The Aspinall Recreation Complex is located in the Town of Lebanon. The Town of Lebanon acquired the 51-acre Aspinall property in 1977 and developed it for recreation in the early 1980s. The property is managed by the Lebanon Recreation Commission and is the major non-school recreational facility in the town. It is located adjacent to Lebanon Elementary School and includes ball fields, tennis courts, and a pavilion (Town of Lebanon, 2013). The E-1 System Lateral Take-up and Relay segment of the AIM Project would cross this property on existing right-of-way from about MPs 2.0 to 2.2.

The portion of the property that would be crossed by the Project is forested and is not developed for recreational use. The crossing would be entirely located within a wetland; mitigation would be conducted in accordance with Algonquin's E&SCP. The adjacent Lebanon Elementary School is actually located closer to the right-of-way than any of the recreational facilities on the Aspinall Complex property. The Project workspace would be about 750 feet northeast of the school (at its closest point). The intervening land is heavily forested, and would provide screening from visual, noise, and dust impacts during Project construction. The shared entrance to the school and the recreation complex would be over 1,150 feet from the access point to the Project workspace along Exeter Road; therefore, construction traffic would not interfere with access to the facilities.

## **Senator Thomas J. Dodd Memorial Stadium**

Dodd Stadium is a minor league baseball stadium located in and owned by the City of Norwich. It is affiliated with the Connecticut Tigers Minor League Baseball team. The stadium opened in 1995 and is primarily used for baseball, with a seating capacity of 6,270. It is most active during the baseball season (June through September) and closed during the winter. The E-1 System Lateral Take-up and Relay segment of the Project would cross the outskirts of the stadium property on existing right-of-way for a total of about 1,489 feet (from about MPs 8.7 to 8.9 and MPs 8.9 to 9.0).

The Project crosses a forested area southwest of the stadium and its associated parking lot. The Project workspace would be about 40 feet from the rear (outfield) edge of the stadium structure, at its closest point. The Project would not interfere with use of the stadium, since it would not cross any developed stadium facilities. However, construction would occur between April and October 2015 (i.e., spring, summer, and early fall), which is the high use period for the stadium (the Connecticut Tigers host home games between mid-June and mid-September, starting at 7:00 p.m.). Temporary noise, dust, and visual impacts would be mitigated by a strip of forest left intact as a buffer between the Project area and the stadium. Algonquin would also regularly water the construction area to control dust, and would install safety fencing and signage. Project traffic would not impact access to the stadium because the road that provides stadium access, Stott Avenue, would not be utilized by construction vehicles. Although Algonquin's existing permanent right-of-way would be expanded to accommodate the replacement pipeline along this segment, operation of the pipeline facilities would not create any new restrictions or conflicts with use of the stadium.

In consultation with stadium officials, Algonquin has agreed to avoid construction activities after 7:00 p.m. and on Sundays during the baseball season. Stadium officials also indicated that high school and college playoff games may be hosted at the stadium prior to the Tigers baseball season. Algonquin has committed to avoiding noise-generating activities while patrons are at the stadium for such events. Therefore, by avoiding construction during events held at the stadium, we conclude that impacts on the use of Dodd Stadium would be sufficiently minimized.

## **Watrous Park**

Watrous Park is located on a 75.1-acre property owned by the Town of Cromwell, which also houses Cromwell Middle School (Cromwell Recreation Department, 2011). Watrous Park is located on a portion of the property behind the school, accessed from Geer Street. Facilities include a pavilion, volleyball courts, tennis courts, basketball courts, a playground, walking trails, softball fields, and a skate park. The park is open daily from 7:00 a.m. to 10:00 p.m. during the summer months and 7:00 a.m. to sunset the rest of year. The Line-36A Loop Extension would cross this property on existing right-of-way from about MPs 0.5 to 0.8.

The construction workspace would be located over 100 feet away from park recreational fields at its closest point, and more than 0.25 mile from the middle school, which shares the property. Because construction would occur primarily during the summer months, users of the nearest park baseball field could experience temporary noise and dust impacts during construction. However, the Project would be located in a forested area that would provide screening to minimize these impacts and avoid visual impacts. Project traffic would not impact access to Watrous Park or Cromwell Middle School, because Geer Street, the main access, would not be utilized by construction traffic. The Project would not have any new permanent impacts on the park.

## **Cromwell Fire District Property**

Managed by the Town of Cromwell, the Cromwell Fire District is a Special Act District created by the Legislature of the State of Connecticut. The District maintains and services the water distribution, pumping, and treatment facilities that service the Town of Cromwell as well as providing fire protection and ambulance service (Cromwell Fire District, 2013). The Line-36A Loop Extension would cross a property owned by the Cromwell Fire District on existing right-of-way from about MPs 1.1 to 1.2. This 7.6-acre property is used for potable public water wells and is occupied by a pump house.

Algonquin has met with representatives of the Cromwell Fire District to determine the location of public water supply wells on the property and to discuss the protection of aboveground supply valves within the proposed Project workspace. Algonquin has committed to continue coordinating with the Fire District to ensure the protection of well valves on the property. Project construction and operation would not impact the function of this facility.

## **Mohegan Tribe of Indians Property**

This property owned by the Mohegan Tribe of Indians is located in the Town of Montville. The E-1 System Lateral Loop would cross the property on existing right-of-way for a total of about 750 feet (at approximate MP 1.1). This land is held in trust by the Mohegan Tribal Nation and is not classified as Sovereign land.

The portion of the property that would be crossed by the Project is forested and undeveloped. Algonquin would expand its existing 30-foot-wide permanent easement by an additional 20 feet to accommodate the new 12-inch diameter pipeline. Algonquin met with representatives of the Mohegan Tribe regarding the proposed Project in June 2013. According to Algonquin, the representatives did not express any concerns about the Project. The expanded permanent easement would permanently impact about 0.3 acre of forest/woodland on the property. Impacts on areas outside the new permanent easement would be temporary, and these areas would be allowed to return to their preconstruction condition. Algonquin has committed to continuing discussions with the tribe to discuss the additional permanent easement and temporary workspaces that would be needed for the Project.

### **State Protected Open Space (Proposed Bike Trail)**

The State of Connecticut has proposed a new bike trail about 120 feet (at nearest) to the east of the existing Farmington M&R Station. Algonquin has reduced its proposed workspace to avoid conflict with the construction of the bike trail. The Town of Farmington has agreed to install a driveway apron to provide access for Algonquin across the bike trail. Therefore, there would be no impact on the development of this trail.

### **Quinebaug and Shetucket Rivers Valley National Heritage Corridor**

The Quinebaug and Shetucket Rivers Valley National Heritage Corridor is located in northeastern Connecticut and portions of Massachusetts. It is an area known for its rural character with rolling hills, farmland, and classic New England scenery. The corridor contains some of the largest unbroken forests in southern New England. In 1994, Congress designated the Quinebaug and Shetucket Rivers Valley as a national heritage corridor to recognize the valley's unique natural and historical qualities and because it is one of the last remaining stretches of green in the Boston to Washington, D.C. heavily urbanized corridor (NPS, 2014b; Connecticut General Assembly, 2000). In 1999, Congress enlarged the corridor to include Quinebaug and Shetucket River Valley towns in both Massachusetts and Connecticut, now numbering 35 in all. The corridor is spread over 695,000 acres. The valley encompasses two scenic rivers, 80 ponds and lakes, more than 130 miles of hiking trails, and habitat for several different species of animals. The region has some 43 historic towns, 118 historic sites, and museums and several neighborhoods that preserve historic structures. Walking and hiking are two of the most popular recreation activities in the park.

Although the corridor is a federally designated national heritage corridor, the federal government does not own or manage any of the associated lands. The NPS indicated that the Last Green Valley, a local non-profit stewardship organization, should be contacted for all comments and questions regarding the corridor. Algonquin contacted The Last Green Valley to provide Project materials in April 2014, and The Last Green Valley is currently reviewing the Project.

In Connecticut, the proposed Project facilities would be located within several municipalities that are included in this corridor, including the City of Norwich, the Town of Chaplin, the Town of Pomfret, the Town of Putnam, and the Town of Windham, where aboveground facilities would be located. The facilities would all be located on private land, and with the exception of the new Oakland Heights M&R Station, they are all preexisting facilities. Modifications at the existing facilities would be consistent with the existing visual character and would not impact the aesthetic character of the corridor. Operation of the new Oakland Heights M&R Station would newly encumber about 1.4 acres of forest/woodland within the corridor, resulting in a minor, but permanent, impact on the visual character at that location. None of the Project facilities would be located in any portions of the corridor designated for public recreational use; therefore, construction and operation of the Project would not impact recreational use of the corridor.

#### **4.8.5.3 Massachusetts**

##### **Norfolk Golf Club**

The Norfolk Golf Club is a private, nine-hole golf club. The West Roxbury Lateral would cross the Norfolk Golf Club property, including a portion of the golf course, between East Street and Canton Street from about MPs 0.0 to 0.1. Based on consultation with club representatives, Algonquin modified the proposed pipeline alignment across the property in order to impact less playable golf course area and to avoid an existing tee box (see section 3.5.2.2). Algonquin has also committed to completing construction on the club property during the fall or winter months, in order to minimize impacts on use of the facilities by the club's membership. After construction, the property would be restored to its

preexisting use and no permanent impacts would occur. Golf course features would be restored by the following season. Therefore, we conclude that impacts on the Norfolk Golf Club would be sufficiently minimized.

### **Gonzalez Field**

Gonzalez Field is a public athletic field located in the Town of Dedham at the intersection of High Street and East Street, adjacent to the Boston-Providence Highway (Dedham Youth Soccer Association, 2014). This field is owned by the Town of Dedham and is also home to the Dedham Youth Soccer Association. The West Roxbury Lateral would traverse the edge of Gonzalez Field from about MPs 2.4 to 2.5.

The proposed pipeline crosses a soccer field located on the property, at the edge of the property nearest to Providence Highway. Algonquin incorporated a route variation to minimize total construction impacts on Gonzalez Field, and to reduce the number of soccer fields disrupted from two to one (see section 3.5.2.2). Additionally, ATWS would be located within the field's parking lot. Construction of the Project would therefore temporarily disrupt recreational use as well as access and parking at the facility. After the construction period, the property would be restored to its preexisting use and no permanent impacts would occur. Algonquin has discussed potential impacts on the field with Town officials, and the Town Board of Parks and Recreation has granted permission for Algonquin to conduct geotechnical, environmental, and cultural resource investigations within the field. Algonquin has committed to continue consultation with the Board to minimize impacts and discuss possible mitigation requirements. Algonquin has agreed to schedule construction across Gonzalez Field after the conclusion of the Town's soccer program in the fall, commencing construction in mid-November of 2015. Therefore, although one soccer field would be disrupted during construction, the construction schedule would minimize impacts on recreational use of the field.

### **Washington-Rochambeau National Historic Trail (Massachusetts Portion)**

The Washington-Rochambeau NHT is described above (see section 4.8.5.1). In the Town of Dedham, the proposed West Roxbury Lateral would be collocated with the NHT along Washington Street from the Dedham Mall northeast to Grove Street (MPs 3.0 to 3.7).

As noted above, the NPS has indicated that they do not have any concerns regarding the proposed Project and the NHT. Algonquin has also consulted with the Town of Dedham Department of Public Works (DPW) to discuss specific construction procedures along Washington Street; the DPW indicated that no additional mitigation related to the NHT would be required. Because the NHT is collocated with a modern paved road, the Project would not have any impact on the recreational use or aesthetic character of the NHT.

### **Mother Brook Reservation**

The Mother Brook Reservation contains the riparian corridor surrounding Mother Brook, a historic hand-dug canal. Managed by the Massachusetts Department of Conservation and Recreation (MADCR), the Mother Brook Reservation's corridor totals 3.7 miles in length and encompasses a total area of about 47.7 acres. Of this amount, 1.8 miles (15.1 acres) are located in the Town of Dedham. Originally built in 1639 to divert water from the Charles River to the Neponset River to create hydropower potential for mills, the brook is now used as part of a flood-control system that diverts water from the Charles River to the Neponset River (Mother Brook Arts and Community Center, 2014). Based on a taking made in 1958 for the limited purpose of flood control, the MADCR holds several permanent easements along Mother Brook along the proposed AIM Project alignment which permit the MADCR to access private property "... for the purpose of dredging and otherwise improving Mother Brook so as to



relieve flood conditions and improve the water quality thereof and to construct, reconstruct and repair such dams and gates as may be required...” (MADCR, 2008). These easements do not allow public access, and the underlying fee interest remains with private landowners.

The West Roxbury Lateral would cross the Mother Brook Reservation along Washington Street between Eastbrook Road and Post Lane in Dedham (MP 3.1). The proposed pipeline would be installed within Washington Street, and would pass above the culvert that carries Mother Brook under Washington Street. Algonquin incorporated a route variation in order to keep the pipeline within Washington Street and pass above Mother Brook (see section 3.5.2.2). Therefore, a crossing of Mother Brook would not be required and there would be no direct impacts on Mother Brook or the Mother Brook Reservation. Because the pipeline would be installed within an existing roadway and because the MADCR’s easement in this area does not allow public access, construction and operation of the Project would not impact any public use of the Mother Brook Reservation. Operation of the Project would not impact the MADCR’s ability to access the reservation and perform flood control activities.

### **Brookdale Cemetery**

Brookdale Cemetery is a non-denominational municipal cemetery located off Washington Street in the Town of Dedham (Town of Dedham, undated). The West Roxbury Lateral would traverse the property boundary along East Street from about MPs 2.8 to 3.1.

The Project would be collocated with East Street in this area, and its operation would not have any impact on the cemetery. During the construction period, pipeline construction along East Street would be visible and audible from the northwestern portion of the cemetery. The cemetery’s main entrance is located on Brookdale Avenue, over 1,000 feet from any Project workspaces, but Project construction could disrupt access to the cemetery for short amounts of time through a secondary entrance gate on East Street. However, these impacts would be temporary and minor.

### **Mary Draper Playground**

The Mary Draper Playground is set back from Washington Street in the West Roxbury section of Boston, and contains a pool, playgrounds, a basketball court, and ball fields (West Roxbury Patch, 2014). The facilities are open year-round. The West Roxbury Lateral would be adjacent to the playground’s entrance from Washington Street near MP 3.6.

The Project would be collocated with Washington Street in this area, and its operation would not have any impact on the playground. The playground field is set back about 300 feet from the Washington Street entrance and is screened by several large residential structures; therefore, Project construction along Washington Street would not have any significant visual or noise impact on users of the playground. However, Project construction could temporarily disrupt access to the playground from Washington Street. This disruption would be short in duration, and would not significantly impact access to the playground as another entrance is located on Stimson Street.

### **Centre Marsh**

The proposed West Roxbury M&R Station is located on a property identified as an Urban Wilds & Natural Area by City of Boston’s Open Space Plan 2008-2014 (City of Boston, 2008). This property is listed as “Centre Marsh” (BNAN, 1990). However, the property has been identified as “lost,” which is defined as “Wilds that have been so obliterated or so altered that any small pieces that are left clearly do not do what the original Wilds did for their neighborhood or for the City” (BNAN, 1990). The City of

Boston's Open Space Plan 2008-2014, Section 9, Seven-Year Action Plan did not include this site among the plan's many goals and objectives of evaluating, protecting, or enhancing open space. Algonquin purchased this private property in 2013 for the proposed West Roxbury M&R Station.

Construction and operation of the West Roxbury M&R Station would permanently convert about 1.0 acre of forest/woodland on this property to industrial use. A strip of woodland would be left intact along Grove Street to mitigate the visual impact of the new M&R station. Because the property is privately owned and has already long been classified as "lost," construction of the new M&R station would not have any impact on its use or development as an urban wild.

### **West Roxbury Quarry Urban Wild**

A ring of undeveloped property identified as Urban Wild by the BNAN surrounds the West Roxbury Crushed Stone Quarry (BNAN, 1990). The quarry is an active, private facility owned by West Roxbury Crushed Stone Company. The West Roxbury Lateral, along Grove Street from about MPs 4.0 to 4.5, would be adjacent to the urban wild property.

The Project would be adjacent to the narrow southwestern portion of the ring of urban wild property. The majority of the urban wild acreage is located in the northeastern portion of the ring, on the opposite side of the active quarry. The Project would have no direct impact on the urban wild lands. During the construction period, temporary visual and noise impacts on recreational users of the urban wild could occur but would be minor relative to the existing character of the area, due to the presence of the active quarry, the dense existing residential development in the area, and the fact that only a small, narrow portion of the urban wild is adjacent to the Project area.

We received several comments expressing concern about conflicts between the Project and operations at the quarry. This is discussed in more detail in section 4.1.4.

### **Roxbury Latin School**

The Roxbury Latin School is an independent boys' private day school in the West Roxbury section of Boston, serving about 300 boys in grades seven through twelve (about 100 from the City of Boston, with the remainder commuting from several surrounding parishes and towns through provided bus service). The school is open year-round, hosting several programs during the summer for students. The school's academic and athletic facilities total about 120 acres. The West Roxbury Lateral would be located about 15 feet from the boundary of the school property along Centre Street at MP 5.1.

Although the proposed West Roxbury Lateral would be about 15 feet from the school property, the school's academic facilities are located about 800 feet southeast of the proposed pipeline at its closest point. The portion of the school property closest to the Project serves as a baseball field. The Project would not have any permanent impact on the school itself. However, users of the baseball field may experience temporary noise and visual impacts during the construction period, although a row of trees at the edge of the field would provide a partial buffer. Overall, the impacts would be temporary and minor.

### **St. Theresa of Avila School and Parish**

The St. Theresa of Avila School is a private Catholic school in the West Roxbury section of Boston serving 300 to 400 students age three to eighth grade commuting to the school from several surrounding parishes and towns. The St. Theresa of Avila Parish is located adjacent to the school and faces Centre Street. The West Roxbury Lateral terminates at an interconnection with National Grid's

facilities north of the intersection of Centre Street and Spring Street, (about MP 5.1), about 295 feet southwest of the school and parish property. The Project would not have any permanent impact on the school or parish. In response to concerns from stakeholders including St. Theresa Parish, Algonquin incorporated a route revision modifying the proposed location of its interconnection with National Grid's facilities in order to avoid construction within St. Theresa Avenue (see section 3.5.2.2). Parish representatives have indicated that this modification addresses their concerns regarding impacts on the school and parish. The school and parish may experience some noise and visual impacts during construction at the endpoint of the West Roxbury Lateral, but these impacts would be temporary and minor.

## **State of Massachusetts Article 97 Land**

Massachusetts Article 97, approved in 1972 as an amendment to the state constitution, requires that public lands acquired for natural resource purposes not be converted to other uses without consideration of a feasible alternative and replacement with equivalent natural resource land. Algonquin has conducted a review of possible Article 97 lands crossed by the West Roxbury Lateral.

Algonquin's review suggests that Gonzalez Field in the Town of Dedham (see above) is subject to Article 97. Discussions between Algonquin and the Town of Dedham concerning the Town's ownership interest and the Project's impact on the field are ongoing.

## **4.8.6 Hazardous Waste Sites and Polychlorinated Biphenyls**

### **4.8.6.1 Hazardous Waste Sites and Landfills**

Algonquin contracted with EDR to prepare a corridor database search for the AIM Project and identified 23 sites within 500 feet of the Project, on an individual basis, with potential and/or actual sources of contamination. Several of these sites have the potential to impact soils or groundwater at Project facilities. Section 4.2.1.5 provides summaries of these sites as they pertain to soils, and table 4.3.1-2 provides a summary of these sites as they pertain to groundwater.

To-date, Algonquin has determined that field sampling would be required at two locations. The first location is along the E-1 System Lateral Take-up and Relay segment near MP 8.6 (Collins and Jewel site) and the other is along the West Roxbury Lateral Pipeline near MP 2.2. The CTDEEP also identified a concern about encountering contamination at a third site near the Lightolier property (also near MP 8.6 along the E-1 System Lateral Take-up and Relay). We have recommended that Algonquin develop a Field Sampling Plan prior to sampling for contamination at these and any other sites identified prior to construction (see section 4.2.2.6).

Algonquin would implement the protocols in its Unexpected Contamination Encounter Procedures if contamination is encountered during construction. We find these procedures to be acceptable. In general, if unanticipated contamination is encountered or suspected during construction, all construction work in the immediate vicinity would be stopped until an appropriate course of action is determined (see section 4.2.2.6). We have reviewed the Unexpected Contamination Encounter Procedures and find it acceptable.

### **4.8.6.2 Polychlorinated Biphenyls**

PCBs are a blend of chemical compounds that were used in a variety of industrial applications until their commercial manufacture was banned by the EPA in 1979. Before then, PCBs were introduced

into many natural gas transmission lines in the United States through the use of PCB-containing lubricants at compressor station sites and in other operation and maintenance activities. Since 1981, the EPA has worked with pipeline operators to identify and remove PCBs from the nation's natural gas transmission systems.

The Algonquin pipeline system is PCB regulated due to PCB concentrations greater than 50 ppm in recovered pipeline liquids. Based on historical sampling at the existing facilities, concentrations of PCBs could range from Non-Detect to less than 500 ppm.

Algonquin's removal of any existing piping or equipment that has been in contact with natural gas would be completed in accordance with the EPA's PCB rules and regulations (40 CFR 761). Algonquin's handling of PCB contaminated pipeline and materials would be performed in accordance with federal and state standard operating procedures (SOP).

Algonquin has developed a SOP for removing, storing, sampling, and disposing of pipe and equipment removed from gas service. "Material removed from gas service" refers to all material that has been in contact with gas flow prior to combustion. Examples of materials that have been in gas service include pipe, valves, separators, meter tubes, and fabricated assemblies. The process of removing pipe and equipment from gas service includes:

1. pigging the pipeline to remove any liquids prior to exhuming the pipe for removal;
2. additional inspection for liquids during pipe or equipment removal; and
3. cutting and removal of the pipe into sections for handling and transportation.

Liquids may be removed using pigging, draining valves, and equipment and purging methods. Pigging is required prior to removal of pipe and equipment except when pipe or equipment cannot be pigged due to size or configuration. Purging of the line using nitrogen or air may be used to further evacuate the pipeline. Additional inspection of pipe for liquids is conducted during removal of the pipe at low points and water crossings. Any residual liquids found during the inspection process are removed. All liquids removed from the pipeline system are handled in accordance with company SOPs and in compliance with federal requirements.

Pipe and equipment would be cut into sections no longer than 40 feet in length and secured with end caps for transportation. Pipe and equipment removed from gas service would be transferred from the right-of-way to a storage facility within 48 hours of removal. Wipe sampling of pipe and equipment would be completed prior to disposal in order to determine proper disposal. Results of wipe sampling would be used to classify the pipe and equipment as unrestricted (less than or equal to 10 micrograms [ $\mu\text{g}$ ] per 100 square centimeters [ $\text{cm}^2$ ]), conditional (greater than 10 and less than 100  $\mu\text{g}$  per 100  $\text{cm}^2$ ), or restricted (greater than or equal to 100  $\mu\text{g}$  per  $\text{cm}^2$ ). There are no special storage requirements for "unrestricted" material. This material may be sold at Algonquin's discretion. Algonquin would decontaminate or dispose of "Conditional" and "restricted" material at a Toxic Substances Control Act landfill in accordance with all applicable federal and state regulations.

In the unlikely and unforeseeable event of an inadvertent release of PCBs to the environment, response and remediation would be conducted in accordance with all applicable federal and state regulations.

## **4.8.7 Visual Resources**

### **4.8.7.1 Pipeline Facilities**

Visual resources along the proposed pipeline routes are a function of geology, climate, and historical processes, and include topographic relief, vegetation, water, wildlife, land use, and human uses and development. The majority of the proposed pipeline facilities (about 93 percent) would be installed within or adjacent to existing pipeline, roadway, railway, and/or other utility rights-of-way. As a result, the visual resources along the majority of the Project have been previously affected by pipeline or other operations.

Visual impacts associated with the Project construction right-of-way and ATWSs would include the removal of existing vegetation and the exposure of bare soils, as well as earthwork and grading scars associated with heavy equipment tracks, trenching, blasting, and machinery and tool storage. Other visual effects could result from the removal of large individual trees that have intrinsic aesthetic value; the removal or alteration of vegetation that may currently provide a visual barrier; or landform changes that introduce contrasts in visual scale, spatial characteristics, form, line, color, or texture.

Visual impacts would be greatest where a pipeline route parallels or crosses roads and the pipeline right-of-way may be seen by passing motorists, from residences where vegetation used for visual screening or for ornamental value is removed, and where the pipeline is routed through forested areas. The duration of visual impacts would depend on the type of vegetation that is cleared or altered. The impact of vegetation clearing would be shortest in open areas where the re-establishment of vegetation following construction would be relatively fast (generally less than 5 years). The impact would be greater in forest land, which would take many years to regenerate. The greatest potential visual impact would result from the removal of large specimen trees, which would take longer than other vegetation to regenerate and would be prevented from re-establishing on the permanent right-of-way.

The area crossed by the pipeline facilities is a highly fragmented landscape, comprising mostly a mixture of open land, residential areas, forest/woodland, industrial/commercial development, and agricultural land. Additionally, as discussed above, about 93 percent of the proposed pipeline routes would be located within or adjacent to the existing rights-of-way. These factors would minimize the visual impact of construction. The visual effect of the pipeline would also be mitigated by the HDD crossings, where impacts on visual resources between the HDD entry and exit holes would be avoided.

After construction, all disturbed areas would be restored and returned to preconstruction conditions in compliance with federal, state, and local permits; landowner agreements; and Algonquin's easement requirements, with the exception of aboveground facility sites.

### **4.8.7.2 Aboveground Facilities**

The modified and new aboveground facilities associated with the AIM Project would be the most visible features and would result in long-term impacts on visual resources. The magnitude of these impacts would depend on a variety of factors such as the existing landscape, the remoteness of the location, and the number of viewpoints from which the facility could be seen.

The work at a majority of the aboveground facilities would occur within the property line of existing compressor station or M&R station sites. Only minor, temporary construction disturbance would occur outside the existing fence line for some facilities. Therefore, after the completion of construction, these aboveground facilities would be consistent with the existing visual landscape.

New aboveground facilities for the AIM Project would include three new M&R stations.

The proposed Assonet M&R Station would be located adjacent to Algonquin's existing North Fall River M&R Station, within the same property line on industrial land. Construction of the new Assonet M&R Station would permanently impact an additional 0.1 acre of forest/woodland and an additional 0.1 acre of open land, but this would not significantly alter the visual character of the property because the station would be adjacent to the existing North Fall River M&R Station.

The proposed West Roxbury M&R Station would be sited on a wooded property located across the street from an active rock quarry. It would be bounded by residential properties to the north, south, and west and there is a residence immediately adjacent to the proposed facility off of Centre Street. Algonquin would maintain an existing wooded buffer along the entire western portion of the property as well as portions on the north and south sides of the site. Although maintaining a wooded buffer around the M&R station would provide substantive visual screening, the location of the site in a dense residential area could result in some visual impacts. Therefore, **we recommend that:**

- **Prior to construction of the West Roxbury M&R Station, Algonquin should file with the Secretary, for review and written approval of the Director of OEP, a detailed site-specific landscaping plan for mitigation of visual impacts at the station.**

The proposed Oakland Heights M&R Station would be located adjacent to the Oakland Heights residential community. To provide visual screening, Algonquin would maintain a 30- to 50-foot buffer of existing vegetation from the edge of the property line to the M&R station. This vegetative buffer would be left undisturbed by construction with the exception of the station access road. Due to this buffer, no significant visual impacts would be likely from construction and operation of this station.

In addition, the existing Willimantic M&R Station would be rebuilt on an adjacent new parcel of land. Algonquin has adjusted the proposed workspace for construction of the proposed rebuild of the station to keep an existing 25-foot-wide vegetative buffer intact between the new facility and South Road. By implementing this mitigation measure, no significant visual impacts would be likely from construction and operation of this station.

A new launcher/receiver and pressure regulating facility would be constructed and operated at MP 12.3 on a parcel within Granite Knolls West. The installation of the launcher/receiver facility on the west side of Stony Street would introduce a new, low profile visual impact in a viewshed otherwise unaffected by aboveground ground structures. The launcher/receiver facility may be visible to passing motorists and pedestrians on or adjacent to Stony Street but would not have a significant impact on the overall visual character of the parks.

#### **4.8.7.3 Pipe and Contractor Ware Yards**

With the possible exception of minor grading activities and surfacing, soils at the pipe and contractor ware yards would not be disturbed. As a result, there would be no permanent impacts on visual resources associated with the use of these yards. The only impacts at yards would be temporary during construction, when trailers, vehicles, pipe, and other construction-related material would be stored at these sites.

#### **4.8.7.4 Access Roads**

Algonquin proposes to use 28 roads for temporary access to the Project facilities during construction and 8 roads for permanent access to the Project facilities during operation. With one

exception, the access roads are comprised of existing gravel roads, unimproved dirt roads, paved and gravel driveways, private industrial and commercial roads, paved parking lots, and golf course roads. Seven of these existing roads would require minor improvements, but this would not have a significant impact on visual resources. After construction, the TARs would be returned to preconstruction conditions unless another arrangement is mutually agreed upon with the landowner.

In addition, one new PAR would be constructed running from Algonquin's existing North Fall River M&R Station to the proposed Assonet M&R Station. The existing station and proposed station would be located adjacent to each other within Algonquin's existing property line. Because this new PAR would be located within the existing industrial property, it would be consistent with existing land use and would not result in significant visual impacts.

#### **4.9 SOCIOECONOMICS**

The socioeconomic conditions and impacts associated with construction and operation of the pipeline facilities, M&R stations, and existing compressor stations in New York, Connecticut, Rhode Island, and Massachusetts are discussed below. The proposed pipeline facilities would be constructed in New York, Connecticut, and Massachusetts. Work at the existing Burrillville Compressor Station in Providence County, Rhode Island does not constitute a new, significant aboveground facility that could result in socioeconomic impacts; therefore, the potential impacts on existing socioeconomic conditions in Rhode Island are not evaluated in this section. The AIM Project includes about 37.4 miles of replacement, loop, lateral, and new natural gas pipeline facilities that would cross three counties in New York, four counties in Connecticut, and two counties in Massachusetts.

The six compressor stations to be modified resulting in the addition of 81,620 hp would be located in Rockland and Putnam Counties, New York; Middlesex and Windham Counties, Connecticut; and Providence County, Rhode Island; however, because the work at these stations would require minimal site disturbance within Algonquin's station property lines and a limited construction workforce, the potential impacts on existing socioeconomic conditions at these existing stations are not evaluated further in this section. Likewise, the AIM Project would include modifications to 24 existing M&R stations in New York, Connecticut, and Massachusetts, but because these modifications would occur within or directly adjacent to existing Algonquin M&R stations, they do not constitute significant aboveground facilities and thus the potential impacts on existing socioeconomic conditions are not evaluated further at these stations. Additionally, three new M&R stations would be constructed in New London, Connecticut and Bristol and Suffolk Counties, Massachusetts; and the removal of one M&R station in New London Connecticut.

The socioeconomic impact area analyzed encompasses an estimated maximum distance of 20 miles for workers to travel each way to and from the construction sites within the following counties:

- Rockland County, New York;
- Westchester County, New York;
- Putnam County, New York;
- Fairfield County, Connecticut;
- Middlesex County, Connecticut;
- Hartford County, Connecticut;
- New London County, Connecticut;
- Norfolk County, Massachusetts;
- Suffolk County, Massachusetts; and
- Bristol County, Massachusetts.

Approximately 93 percent of the 37.4 miles of pipeline facilities would be within or adjacent to existing rights-of-way, consisting of Algonquin's pipeline rights-of-way, public roadways, railways, and/or other utility rights-of-way. The potential socioeconomic effects of the Project include population effects associated with the influx of construction workers and the impact of these workers on public services and temporary housing during construction. Other potential socioeconomic effects include traffic impacts due to in-street construction; increased vehicle traffic necessary to move materials, equipment, and workers to and from the right-of-way; as well as increased property tax revenue, job opportunities, and income associated with local construction employment.

#### **4.9.1 Population and Employment**

Table 4.9.1-1 provides a summary of selected demographic and socioeconomic conditions for the communities that would be affected by the AIM Project in New York, Connecticut, and Massachusetts. The major occupations throughout the Project area are in education, health, and social services; professional, scientific, management, administrative, and waste management; retail; manufacturing; finance and insurance; and real estate and rental and leasing.

The population of the potentially affected counties in New York from Project construction range from approximately 99,710 to 949,113 (U.S. Census Bureau, 2010a). One metropolitan area<sup>4</sup>, the New York–Jersey City–White Plains Metropolitan Division, is located within the Project area, which includes all of Rockland and Westchester Counties. The AIM Project pipeline would pass through two communities in Rockland County (the Town of Haverstraw [including the Village of Pomona] and the Town of Stony Point [including the Hamlet of Tomkins Cove]) and four communities in Westchester County (the Town of Cortlandt [including the Hamlet of Verplanck and the Village of Buchanan], the City of Peekskill, and the Town of Yorktown). Population densities vary from approximately 433 to 2,205 people per square mile (U.S. Census Bureau, 2010a), and the county-level civilian workforces range from 65.6 to 68.4 percent (U.S. Census Bureau, 2012). Based on 2011 data, the per capita incomes in Rockland, Putnam, and Westchester Counties are about \$3,187, \$7,950, and \$16,510 higher, respectively, than the state average of \$31,796. Unemployment rates within the potentially affected New York counties range from 5.7 to 6.2 percent (based on July 2013 for county data and August 2013 for state data).

In Connecticut, the populations in the potentially affected counties from Project construction range from approximately 165,676 to 916,829 (U.S. Census Bureau, 2010a). Three metropolitan areas are located within the Project Area: the Norwich-New London-Westerly Metro Area, the Hartford-West Hartford-East Hartford Metro Areas, and the Bridgeport-Stamford-Norwalk Metro Area. Population densities vary from approximately 412 to 1,467 people per square mile (U.S. Census Bureau, 2010a), and the county-level civilian workforces range from 65.3 to 68.8 percent (U.S. Census Bureau, 2012). Based on 2011 data, the per capita incomes in Middlesex and Fairfield Counties are about \$1,720 and \$11,295 higher, respectively, than the state average of \$37,627. However, per capita incomes in New London and Hartford Counties are between \$4,149 and \$3,636 less than the Connecticut state average. Unemployment rates within the potentially affected Connecticut counties range from 7.0 to 8.8 percent (based on July 2013 for county data and August 2013 for state data).

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<sup>4</sup> A metropolitan or metro area contains a core urban area of 50,000 or more in population, and a micro area contains an urban core of at least 10,000 (but less than 50,000) population. Each metro or micro area consists of one or more counties and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core (U.S. Census Bureau, 2013b, available online at <http://www.census.gov/population/metro/>).



TABLE 4.9.1-1						
Existing Economic Conditions by Geographic Area for the AIM Project						
State/County	Population (2010) <sup>a</sup>	Population Density (Persons/sq. mile) <sup>a</sup>	Per Capita Income <sup>b</sup>	Unemployment Rate July 2013/ August 2013 <sup>c</sup>	Civilian Workforce (percent) <sup>b</sup>	Top Three Industries <sup>b</sup>
<b>New York</b>	19,378,102	401.9	\$31,796	7.6	63.6	E, P, R
Rockland County	311,687	1,795.9	\$34,983	6.0	65.6	E, P, R
Putnam County	99,710	432.9	\$39,746	5.7	68.4	E, P, R
Westchester County	949,113	2,204.7	\$48,306	6.2	65.7	E, P, F
<b>Connecticut</b>	3,574,097	738.1	\$37,627	8.1	67.9	E, M, R
Fairfield County	916,829	1,467.2	\$48,922	7.5	68.1	E, P, F
Middlesex County	165,676	448.6	\$39,347	7.0	68.8	E, M, P
Hartford County	894,014	1,216.2	\$33,991	8.8	67.6	E, F, M
New London County	274,055	412.2	\$33,478	8.4	65.3	E, A, M
<b>Commonwealth of Massachusetts</b>	6,547,629	839.4	\$35,051	7.2	67.7	E, P, R
Norfolk County	670,850	1,693.6	\$43,685	6.2	68.3	E, P, F
Suffolk County	722,023	12,415.7	\$32,034	7.6	69.0	E, P, A
Bristol County	548,285	991.3	\$28,682	9.7	67.6	E, R, M
Sources:						
<sup>a</sup> U.S. Census Bureau, 2010a. Available online at <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml#none">http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml#none</a> .						
<sup>b</sup> U.S. Census Bureau, 2013a. U.S. Census Bureau, 2007-2011 American Community Survey 5-Year Estimates. Available online at <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml">http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml</a> .						
<sup>c</sup> Bureau of Labor Statistics, 2013. Available online at <a href="http://www.bls.gov/web/laus/laumstrk.htm">http://www.bls.gov/web/laus/laumstrk.htm</a> (August 2013 is for state data while July 2013 is for county data).						
Industries:						
A – Arts, entertainment, and recreation, and accommodation and food services						
E – Educational services, and health care and social assistance						
F – Finance and insurance, and real estate and rental and leasing						
M – Manufacturing						
P – Professional, scientific, and management, and administrative and waste management services						
R – Retail trade						

For the Commonwealth of Massachusetts, the populations in potentially affected counties from Project construction range from approximately 548,285 to 722,023 (U.S. Census Bureau, 2010a). One metropolitan area, the Boston-Cambridge-Quincy Metro Area is located within the Project area. It includes the Town of Westwood, the Town of Dedham, and the neighborhood of West Roxbury (City of Boston), where the AIM Project pipeline facilities are proposed to be located. Population densities vary from approximately 991 to 12,416 people per square mile (U.S. Census Bureau, 2010a), and the county-level civilian workforces range from 67.6 to 69.0 percent (U.S. Census Bureau, 2012). Based on 2011 data, the per capita income for Norfolk County is about \$8,634 higher than the state average of \$35,051. However, per capita incomes in Bristol and Suffolk Counties are between \$6,369 and \$3,017 less than the

Massachusetts state average. Unemployment rates within the potentially affected Massachusetts counties range from 6.2 to 9.7 percent (based on July 2013 for county data and August 2013 for state data).

Construction of the AIM Project would temporarily increase the population in the general vicinity of the Project. Table 4.9.1-2 lists the size of the estimated construction workforce for the AIM Project. The highest concentration of workers for the Project would occur from the spring of 2015 and continue until August of 2016. Workforce numbers during this period would range from a low of about 10 workers to a high of about 899 workers and includes preparation and start-up efforts for construction of the pipeline, as well as peak construction at the three new M&R station sites. Peak construction workforce is expected to total about 2,693 workers across all Project components (see table 4.9.1-2). Once the pipeline and the M&R stations are completed, the workforce numbers would decrease substantially. Construction at each Project location would last approximately 1 to 12 months. The number of personnel required at each proposed activity location would vary greatly, depending on the activity (i.e., HDD crossings, etc.). If a larger than anticipated percentage of non-local workers is required to meet peak workforce requirements, sufficient workers should be available in the labor pool in the surrounding counties and states.

Algonquin anticipates hiring a substantial number of local construction workers with the requisite experience for the installation of the natural gas facilities. These local hires would include surveyors, welders, equipment operators, and general laborers. About 15 to 76 percent of the construction workers are expected to be local hires depending on the facility. The local supply of construction workers needed for the AIM Project would be derived from workers employed in the construction industry in the affected counties of New York, Connecticut, and Massachusetts including those employed in the large metro areas identified earlier. As shown in table 4.9.1-3, the New-York-Jersey City-White Plains Metro Area has the highest population and potential workforce of 19,567,410 people. The Norwich–New London Metro Area, with a potential workforce of only 274,055 people, is also well above the maximum number of workers needed for the Project. Construction personnel that may be hired from outside these areas include supervisory personnel and inspectors. These individuals are anticipated to temporarily relocate to the Project vicinity during construction.

Project-area population impacts would be temporary and proportionally small. The total population change would equal the total number of non-local construction workers plus any family members accompanying them. Given the brief construction period and in our experience, most non-local workers would not be expected to be accompanied by their families. Based on the county populations within the Project area, the additional people that might temporarily relocate to the area would not result in a significant change. Additionally, this temporary increase in population would be distributed throughout the proposed facilities and would not have a permanent impact on the population. A brief decrease in the unemployment rate could occur as a result of hiring local workers for construction and increased demands on the local economy. Algonquin would add three full-time permanent workers for operation of the proposed and modified facilities. This small number would have a negligible impact on the population and employment in the project area.

TABLE 4.9.1-2

## Summary of the Average and Peak Construction Workforce by Facility for the AIM Project

Facility	Length (miles)	Year	Average Workforce	Peak Workforce
<b>PIPELINE FACILITIES</b>				
<b>Replacement Pipeline</b>				
Mainline Take-up and Relay <sup>a</sup>	20.1	2016	124	899
Hudson River HDD <sup>b</sup>	2.1	2015	15	178
Interstate 84/Still River HDD	0.7	2015	17	86
E-1 System Lateral Take-up and Relay	9.1	2015	18	158
<b>Loop Extension</b>				
Line-36A Loop Extension	2.0	2015	12	201
E-1 System Lateral Loop Extension	1.3	2015	66	133
<b>New Pipeline</b>				
West Roxbury Lateral	5.1	2015/2016	15	162
<b>ABOVEGROUND FACILITIES</b>				
<b>Existing Compressor Station Modifications</b>				
Stony Point Compressor Station <sup>c</sup>	NA	2016	5	76
Southeast Compressor Station	NA	2016	11	76
Oxford Compressor Stations	NA	2016	4	14
Cromwell Compressor Station	NA	2015	12	76
Chaplin Compressor Station	NA	2015	5	38
Burrillville Compressor Station	NA	2015	8	76
<b>Existing M&amp;R Station Modifications</b>				
Stony Point M&R Station	NA	2016	0	0
Peekskill M&R Station	NA	2015	3	13
Cortlandt M&R Station	NA	2016	5	10
West Danbury M&R Station	NA	2016	2	11
Southbury M&R Station	NA	2015	3	11
Waterbury M&R Station	NA	2016	10	10
North Haven M&R Station	NA	2016	10	10
Guilford M&R Station	NA	2015	1	10
Farmington M&R Station	NA	2016	1	11
Glastonbury M&R Station	NA	2015	4	11
Middletown M&R Station	NA	2015	5	10
Salem Pike M&R Station	NA	2015	1	11
Montville M&R Station	NA	2015	2	10
Willimantic M&R Station	NA	2015	1	12
Pomfret M&R Station	NA	2016	6	11
Putnam M&R Station	NA	2016	6	11
North Fall River M&R Station	NA	2016	3	11
New Bedford M&R Station	NA	2016	5	10
Middleborough M&R Station	NA	2015	1	11
Brockton M&R Station	NA	2015	4	13
Norwood M&R Station	NA	2015	5	10
Needham M&R Station	NA	2016	6	11
Wellesley M&R Station	NA	2015	6	11
Mystic M&R Station	NA	2015	6	11

TABLE 4.9.1-2 (cont'd)				
Summary of the Average and Peak Construction Workforce by Facility for the AIM Project				
Facility	Length (miles)	Year	Average Workforce	Peak Workforce
<b>New M&amp;R Stations</b>				
Oakland Heights M&R Station	NA	2016	4	11
Assonet M&R Station	NA	2015	4	11
West Roxbury M&R Station	NA	2016	4	11
<b>Existing M&amp;R Station Removal</b>				
Greenville M&R Station	NA	2016	1	10
<b>TOTALS</b>			<b>421</b>	<b>2,693</b>
<sup>a</sup> Includes the Haverstraw to Stony Point, Stony Point to Yorktown, and Southeast to MLV 19 Take-up and Relay segments. <sup>b</sup> Includes the 0.7-mile HDD and the surrounding areas not adjacent to Algonquin's existing right-of-way. <sup>c</sup> Construction workforce is shown in the mainline take-up and relay.				

TABLE 4.9.1-3			
Population Changes for the Five Metro Areas Within the Vicinity of the AIM Project			
Metro Area	Population		Percent Change
	April 1, 2000	April 1, 2010	
New York-Jersey City-White Plains, NY	18,944,519	19,567,410	+3.3
Norwich-New London, CT	259,088	274,055	+5.8
Hartford-West Hartford-East Hartford, CT	1,148,618	1,212,381	+5.6
Bridgeport-Stamford-Norwalk, CT	882,566	916,829	+3.9
Boston-Cambridge-Quincy, MA	4,391,344	4,552,402	+3.7
Source: U.S. Census. 2010b. February 2013 Delineations BL. Available online at <a href="http://www.bls.gov/eag/eag.ma_boston_nd.htm">http://www.bls.gov/eag/eag.ma_boston_nd.htm</a> .			

## 4.9.2 Housing

Housing statistics for the counties affected by the Project are presented in table 4.9.2-1. In 2012, the number of vacant housing units across the 10 potentially affected counties in New York, Connecticut, and Massachusetts ranged from a high of 27,762 units in Suffolk County, Massachusetts to a low of 3,075 vacant units in Westchester County, New York. Rental vacancy rates in these same counties varied from 7.8 percent in Fairfield County to 4.1 percent in Westchester County.

Temporary housing availability varies geographically within the counties near the proposed Project facilities. Temporary housing is available in the form of daily, weekly, or monthly rentals in hotels and motels.

In addition to vacant housing, there are about 1,200 hotels/motels and 76 campgrounds/recreational vehicle parks in the Project area. Connecticut has the highest number of hotels/motels and campgrounds/recreational vehicle parks at a combined total of 572 compared to New York with a combined total of 190. Suffolk County in Massachusetts has the highest number of hotels/motels of 308 compared to Westchester County in New York with a low of 14.

TABLE 4.9.2-1				
Housing Statistics by County in the Vicinity of the AIM Project				
State, County	Vacant Housing Units <sup>a</sup>	Rental Vacancy Rate (percent) <sup>a</sup>	Number of Hotels/Motels <sup>b</sup>	Number of Campgrounds/Recreational Vehicle Parks <sup>c, d</sup>
<b>New York</b>				
Rockland County	5,286	5.3	40	29
Putnam County	23,845	5.3	99	8
Westchester County	3,075	4.1	14	0
Total	32,206	4.9	153	37
<b>Connecticut</b>				
Fairfield County	27,734	7.8	155	1
Middlesex County	7,682	5.5	45	17 <sup>a</sup>
Hartford County	24,842	7.3	178	1
New London County	13,451	6.0	159	16
Total	73,709	6.9	537	35
<b>Massachusetts</b>				
Norfolk County	13,399	4.9	105	2
Suffolk County	27,762	5.2	308	1
Bristol County	19,489	6.5	95	1
Total	60,650	5.5	508	4
<sup>a</sup> U.S. Census Bureau, 2013a. Available online at <a href="http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml">http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml</a> . <sup>b</sup> Hotels and Motels. 2013. Available online at <a href="http://www.hotelmotels.info/">http://www.hotelmotels.info/</a> . <sup>c</sup> Yellow Pages. 2013. Available online at <a href="http://www.yellowpages.com">http://www.yellowpages.com</a> . Visit Connecticut. 2013. Available online at <a href="http://www.ctvisit.com/">http://www.ctvisit.com/</a> . MADCR, 2013. Available online at <a href="http://www.mass.gov/eea/agencies/dcr/massparks/recreational-activities/massparks-camping-info-generic.html">http://www.mass.gov/eea/agencies/dcr/massparks/recreational-activities/massparks-camping-info-generic.html</a> . <sup>d</sup> Recreational Vehicle Clubs and Campgrounds. 2013. Available online at <a href="http://www.rv-clubs.us/">http://www.rv-clubs.us/</a> . Some campgrounds and/or parks contained over 100 sites available for lodging purposes.				

Construction of the AIM Project could temporarily decrease the availability of housing in the Project area; however, the Project could have a short-term positive impact on the area's rental industry through increased demand and higher rates of occupancy. Thus, no significant impacts on the local housing market are expected. Assuming that the local construction workers do not require housing, a range of between 592 and 2,096 housing units<sup>5</sup> for non-local workers may be required during peak construction activities. Given the vacancy rates (4.1 percent to 7.8 percent) and the high number of vacant housing units in the counties that would be affected by the Project (32,206 in New York, 73,709 in Connecticut, and 60,650 in the Commonwealth of Massachusetts), construction crews should not encounter difficulty in finding temporary housing. In addition, we conclude that the three new operational workers would not have a significant impact on housing availability in the area.

<sup>5</sup> As provided in section 4.9.1, the peak construction workforce is expected to total about 2,693 workers of which between 15 and 76 percent are expected to be local hires or between 85 and 24 percent of non-local workers.

### 4.9.3 Public Services

A wide range of public services and facilities are also offered in the AIM Project area. Services and facilities include hospitals, full-service law enforcement, career and volunteer fire departments, and schools. Sheriffs also serve each county, except those in Connecticut, which are served by State Marshals and Judicial Marshals. Table 4.9.3-1 provides an overview of select public services available by county in the vicinity of the Project area. There are a number of police departments and fire departments or districts within 0.5 mile of the proposed Project route, including Buchanan Village Police Department (New York), Buchanan Fire Department (New York), Verplanck Fire District (New York), Cromwell Fire Department (Connecticut), Lebanon Police Department (Connecticut), Lebanon Fire Department (Connecticut), Town of Dedham Police Department (Massachusetts), and Dedham Fire Department (Massachusetts).

Based on the number of police (186) and fire stations (677), public schools (1,639), and hospitals (57), there appears to be adequate public service infrastructure in the vicinity of the AIM Project to accommodate the temporary needs of the non-local construction workers and their families.

In the event of an on-the-job accident, Algonquin's contractors could require police, fire, and/or medical services, depending on the type of emergency; however, the anticipated demand for these services would not exceed the existing capabilities of the emergency service infrastructure in the Project area. Short-term, temporary impacts on certain other public services are possible, which would include the need for localized police assistance or certified flaggers to control traffic flow during construction activities. Additional discussion of traffic and public service assistance necessary to support traffic control is provided in section 4.9.5.

Table 4.9.3-2 provides the names of schools within 0.5 mile of the Project pipeline right-of-way. Based on the number and size of these schools, there appears to be adequate education infrastructure in the vicinity of the Project to accommodate any temporary educational needs for the number of non-local construction workers and their families.

In summary, there are ample public services available in the area to meet the needs of the AIM Project. Therefore, we do not believe any long-term impacts would result from construction of the Project.

We received comments about the safety of installing a high-pressure pipeline in urban or developed setting in close proximity to facilities such as schools. As further discussed in section 4.12.1, Algonquin would construct, operate, maintain, and inspect the proposed facilities to meet or exceed PHMSA's safety requirements.

We received several comments on the draft EIS regarding emergency response capabilities in the Project area. Algonquin currently operates existing pipeline facilities in all of the municipalities where the proposed Project facilities are to be located. According to Algonquin, there have been no issues regarding payment for training or equipment identified in the past 60 years. Algonquin pays property taxes on all of its facilities and presumably these funds are available to assist with local resource needs. Furthermore, Algonquin offers to provide training with municipalities every 3 years and, if requested, is available to provide more frequent training or a specific class related to the Project. We find these measures acceptable. Additional discussion on the safety measures that would be implemented for the Project is provided in section 4.12.

TABLE 4.9.3-1					
Public Service Infrastructure for the AIM Project					
State, County	Number of Fire Stations (by active firefighter type) <sup>a</sup>	Number of Police Departments <sup>b</sup>	Number of Public Schools <sup>c</sup>	Number of Hospitals <sup>d, e, f</sup>	Number of Hospital Beds <sup>d, e, f, g</sup>
<b>New York</b>					
Rockland County	46 (0 career/ 1,944 volunteer)	10	70	4	1,018
Putnam County	129 (1,276 career/4,290 volunteer)	44	263	15	4,601
Westchester County	20 (0 career/ 904 volunteer)	6	22	1	298
<b>Connecticut<sup>h</sup></b>					
Fairfield County	97 (1,211 career/ 1,527 volunteer)	24	252	6	4,558
Middlesex County	29 (104 career/864 volunteer)	7	60	1	230
Hartford County	125 (1,069 career/1,580 volunteer)	27	342	8	2,649
New London County	61 (369 career/ 1,330 volunteer)	13	105	2	425
<b>Commonwealth of Massachusetts</b>					
Norfolk County	61 (1,257 career/ 6 volunteer)	30	190	4	600
Suffolk County	45 (1,817 career/ 0 volunteer)	5 <sup>i</sup>	190	12	4,099
Bristol County	64 (941 career/ 124 volunteer)	20	145	4	1,310
Sources:					
<sup>a</sup>	U.S. Fire Administration, Federal Emergency Management Agency. 2013. Available online at <a href="http://apps.usfa.fema.gov/census/display.cfm">http://apps.usfa.fema.gov/census/display.cfm</a> .				
<sup>b</sup>	USACops. 2013. Available online at <a href="http://www.usacops.com/">http://www.usacops.com/</a> . National Sheriffs' Association. 2013. Available online at <a href="http://sheriffs.org/iframepage/americas-sheriffs">http://sheriffs.org/iframepage/americas-sheriffs</a> . CT State Marshal System. 2013. Available online at <a href="http://das.ct.gov/cr1.aspx?page=107">http://das.ct.gov/cr1.aspx?page=107</a> . CT Judicial Marshals. 2013. Available online at <a href="http://ibpolocal731.org/">http://ibpolocal731.org/</a> . CT State Troopers. 2013. Available online at <a href="http://www.ct.gov/despp/lib/despp/dsp/csp_troops_2012_20120816.pdf">http://www.ct.gov/despp/lib/despp/dsp/csp_troops_2012_20120816.pdf</a> .				
<sup>c</sup>	Public School Review. 2013. Available online at <a href="http://www.publicschoolreview.com/">http://www.publicschoolreview.com/</a> .				
<sup>d</sup>	NYSDOH. 2013b. Available online at <a href="http://hospitals.nyhealth.gov/">http://hospitals.nyhealth.gov/</a> .				
<sup>e</sup>	American Hospital Directory. 2013a. Available online at <a href="http://www.ahd.com/states/hospital_CT.html">http://www.ahd.com/states/hospital_CT.html</a> .				
<sup>f</sup>	American Hospital Directory. 2013b. Available online at <a href="http://www.ahd.com/states/hospital_MA.html">http://www.ahd.com/states/hospital_MA.html</a> .				
<sup>g</sup>	Hospitals do not include rehabilitation, long-term, and psychiatric hospitals.				
<sup>h</sup>	Includes Resident State Trooper districts. Resident Troopers are regular members of the state police that are assigned specifically to that one town who provide the bulk of the police administrative tasks, such as supervision of part-time town officers, if any.				
<sup>i</sup>	The City of Boston has one police department serving as the headquarters, however broken up in neighborhood areas are 12 individual police districts serving these neighborhoods.				

TABLE 4.9.3-2			
Public Schools Within 0.5 Mile of the Pipeline Right-of-Way for the AIM Project <sup>a</sup>			
State/County/School	Milepost Location	Location in Relation to Right-of-Way	Number of Students
<b>New York</b>			
Westchester County			
Verplanck Elementary	5.0	500 feet south	351
<b>Connecticut</b>			
Fairfield County			
Western Connecticut State University	2.8	400 to 900 feet south	6,025
Danbury High School	4.4	1,440 feet north	2,898
Middlesex County			
Cromwell Middle School	0.8	1,700 feet south	475
New London County			
Lebanon Elementary	2.0	1,000 feet southwest	482
<b>Massachusetts</b>			
Norfolk County			
Dedham Day School	1.7	1,800 feet west	267
Ursuline Academy	1.9	2,300 feet northwest	390
Dedham High School	2.5	2,100 feet southeast	802
Dedham Middle School	2.5	1,500 feet southeast	643
Suffolk County			
Ohrenberger School	3.7	1,900 feet east	642
Beethoven School	3.9	300 feet east	261
Joyce Kilmer School	4.5	200 feet northwest	430
Catholic Memorial School	5.0	1,400 feet west	747
Roxbury Latin	5.1	15 to 800 feet southeast	299
St. Theresa of Avila Elementary School	5.1	100 to 115 feet southeast	435
<sup>a</sup> Public School Review. 2014. Available online at <a href="http://www.publicschoolreview.com/">http://www.publicschoolreview.com/</a> ; Western Connecticut State University statistics, available online at <a href="https://www.wcsu.edu/president/facts-figures.asp">https://www.wcsu.edu/president/facts-figures.asp</a> .			

#### 4.9.4 Public Utilities and Related Infrastructure

The pipeline would cross a number of buried utilities and would be constructed within roadways that include existing buried utilities such as sewer and water lines within the road easement. Prior to construction, Algonquin would identify and locate existing utility lines and other sensitive resources identified in easement agreements or by federal and state agencies to prevent accidental damage during construction. Algonquin's contractors would contact the "Call Before You Dig" or "One Call" system, or state or local utility operators, to verify and mark all utilities along the Project workspace areas to minimize the potential for damage to other buried facilities in the area. If there is a question as to the location of a utility, such as a water, cable, gas, or sewer line, Algonquin would verify the vertical and horizontal location of the existing infrastructure using field instrumentation and test pits prior to installation of the pipeline. Where the proposed pipeline crosses under an existing utility line, the utility line would be temporarily supported as required. After the pipeline is installed, the backfill would be compacted properly to prevent settling. If concerns are raised regarding utility damage, a post-construction inspection would also be performed to clarify damages. Algonquin would be responsible for the repair/replacement of any damaged existing sewer or water infrastructure to the satisfaction of the city/utility owner and to ensure the impacts on residences or businesses as a result of any such damage are minimized. Algonquin would comply with appropriate federal, state, and local requirements intended to protect existing utilities that are crossed by the pipeline, which is consistent with the terms and conditions



of the FERC Certificate if the Project is approved. These measures would minimize potential impacts on water, sewer, and other utilities. Specific details regarding individual crossings would be provided by Algonquin to the appropriate municipal permitting agencies prior to construction.

We received comments regarding the potential effect of Project construction on subsurface systems. A subsurface drain or drainage is any artificial system of pipes or conduits designed to intercept, collect, and convey excess soil moisture to a suitable outlet. These may include clay and concrete tile, vitrified sewer tile, corrugated plastic tubing, and stone drains. Following construction, Algonquin would repair and/or replace any damaged subsurface drainage systems that were affected during Project implementation.

No impacts on existing utilities and related infrastructure are anticipated during operation of the proposed facilities and only short-term, temporary impacts would result from construction activities.

#### **4.9.5 Transportation and Traffic**

The local road and highway system in the vicinity of the proposed Project facilities is readily accessible by interstate highways, U.S. highways, state highways, secondary state highways, county roads, and private roads. The Project may temporarily impact transportation and traffic during construction across and within roadways and railroads and due to increased vehicle traffic associated with the commuting of the construction workforce to the Project area and the movement of construction vehicles and delivery of equipment and materials to the construction work area. However, no long-term impacts are anticipated.

To the extent feasible, existing public and private road crossings along the AIM Project routes would be used as the primary means of accessing rights-of-ways. In addition to the existing access available by the use of public roads, Algonquin would use 35 existing roads for temporary or permanent access during Project construction. Of this total, 15 access roads would be in New York, 16 access roads in Connecticut, and four access roads in Massachusetts (see section 2.2.4).

Access to the Project area is also served by other means of transportation such as commuter rail systems and buses. As noted earlier, construction activities would be located in or near large metropolitan areas that have sufficient transportation infrastructure. For instance, in New York, the Project area is serviced by several lines and stops along the Metro North Railroad system (Metropolitan Transportation Authority, 2013). In Connecticut, there are 50 rail stations providing easy access to the Project area (CTrides, 2013a) and 8 state-owned bus divisions serving different areas of the state (Connecticut Transit, 2013b). In Massachusetts, the Massachusetts Bay Transit Authority commuter rail system provides over 20 transit lines with direct access to the Project area (Massachusetts Bay Transit Authority, 2013). The Project area also provides convenient (free) park and ride areas in numerous areas along the major expressway and highway systems for commuters.

Table F-1 in appendix F provides the milepost as well as the crossing method for each of the road and railroad crossings associated with the Project. In addition to road and railroad crossings, portions of the West Roxbury Lateral in Massachusetts would be installed within roadways using in-street construction methods. Road and railroad crossings and in-street construction are discussed in more detail below.

#### 4.9.5.1 Roadway and Railroad Crossings

The AIM Project would require 100 public road crossings and 5 railroad crossings (see table F-1 in appendix F). The crossings would be accomplished using one of several possible methods. Railroads would be bored or crossed using the HDD method and roads would either be bored, cased, hammered, or open-cut. A summary of each of these crossing techniques is provided in section 2.3.1. The use of boring and hammering techniques would avoid road and rail surface impacts, but the use of the open-cut crossing method would not. Road crossing permits would be obtained from applicable federal, state, and local agencies. These permits would dictate the specific requirements for the day-to-day construction activities at each crossing, and the restoration and repair of the areas after construction.

The open-cut crossing method would primarily be used to cross driveways, parking lots, and roads with low traffic densities. The first step for an open-cut crossing would be to install traffic control devices. Traffic would be detoured around the open trench during the installation process. The pipeline crossing would be installed one lane at a time and, as the pipe is installed, successive lanes would alternately be taken out of service until the crossing is completed. Another option that may be used would be to temporarily close a portion of the road and detour traffic around the work area onto an adjacent roadway.

In response to public scoping comments, Algonquin retained traffic management consultants to provide traffic engineering consulting services in support of the AIM Project facilities, particularly in Massachusetts and New York. Algonquin has committed to consulting with each municipality along the Project to address potential traffic-related impacts associated with constructing the Project. Algonquin has also prepared separate traffic management plans for the West Roxbury Lateral and pipeline segments in New York (see appendix G). Since issuance of the draft EIS for the Project, Algonquin has updated its traffic management plan for the West Roxbury Lateral, which is discussed in section 4.9.5.2.

The Traffic Management Plan for the New York Pipeline Segments includes a summary of roadways where Project construction would take place and information regarding general traffic management strategies. The locations and crossing methods of the proposed pipeline installations in New York are summarized in table F-1 in appendix F. All of the roads to be crossed during construction are paved.

The general traffic management plans for the roadways affected by pipeline construction in New York are provided in appendix G. These detailed plans contain temporary traffic control (TTC) devices for:

- short-<sup>6</sup> or intermediate-term<sup>7</sup> stationary lane closures on two-lane, two-way roadways (TTC no. 1);
- short- or intermediate-term single lane closures for an undivided, multi-lane highway (TTC no. 2);
- double interior lane closures for a multi-lane highway (TTC no. 3);

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<sup>6</sup> Short-term stationary closure: daytime work that occupies a location for more than 1 hour within a single daylight period (NYSDOT, 2014).

<sup>7</sup> Intermediate-term stationary closure: work that occupies a location more than one daylight period up to 3 consecutive days, or nighttime work lasting more than 1 hour (NYSDOT, 2014).

- short- or intermediate-term sidewalk detour on a two-lane, two-way roadway (TTC no. 4);
- road closure with off-site detour on two-lane, two-way roadways (TTC no. 5); and
- work beyond the shoulder at a construction entrance (TTC no. 6).

The TTC typical detail(s) to be implemented for the crossing of a proposed roadway are also specified and provided in appendix G.

We have reviewed the *Traffic Management Plan for the New York Pipeline Segments* and find it to be acceptable; however, several of the road crossings listed in the plan were identified as needing further site-specific details (i.e., Zachary Taylor Street, Gate Hill Road (Highway 210), Bleakley Avenue, Route 9A, Montrose Station Road, Maple Avenue, and Cordwood Road). Therefore, **we recommend that:**

- **Prior to construction in New York, Algonquin should file with the Secretary, for review and written approval of the Director of OEP, a revised Traffic Management Plan for the New York pipeline segments that includes the site-specific details for the crossings of Zachary Taylor Street, Gate Hill Road (Highway 210), Bleakley Avenue, Route 9A, Montrose Station Road, Maple Avenue, and Cordwood Road.**

#### 4.9.5.2 In-street Construction

In addition to road crossings, portions of the West Roxbury Lateral would be constructed within or along existing roadways. A detailed description of the in-street construction method is provided in section 2.3.1.2. In-street construction would affect traffic in the Project area and could also effect on-street parking and use of sidewalks adjacent to the roadway. Since issuance of the draft EIS, Algonquin has reduced the length of the West Roxbury Lateral from 5.1 miles to 4.9 miles, a reduction of about 1,395 linear feet. The modifications result in a 2.9-acre reduction in the overall workspace area required to construct the West Roxbury Lateral. Additionally, Algonquin has submitted other minor pipeline and workspace adjustments along the West Roxbury Lateral route as a result of further consultation with landowners, stakeholders, and agencies to minimize potential impacts on traffic flow patterns (see sections 3.5.2 and 3.5.3). Algonquin has committed to consulting with each municipality along the Project corridor to address potential traffic-related impacts associated with constructing the Project. Road crossing permits would be obtained from applicable federal, state, and local agencies, including the City of Boston and the Town of Dedham before conducting work in these roadways. As discussed above, Algonquin has updated its traffic management plan for the West Roxbury Lateral (see appendix G).

The Updated Traffic Management Assessment and Plans for the West Roxbury Lateral includes the following information to help assess the potential impacts of the Project along this pipeline segment:

- current level-of-service (LOS) and projected change in LOS during construction;
- duration of construction, time of year, number of days per week, and time of day for each segment;
- the severity and duration of potential traffic and business interruptions or delays at different times of the year and at different times of the day during peak periods and hours;

- turning movement counts at key intersections for peak commuting hours and peak shopping hours;
- location of lane closures, including the parking lane, and other available parking areas during site-specific closures; and
- the specific mitigation measures to be implemented to alleviate traffic congestion in these areas during construction.

The plan includes detailed traffic counts at key locations along the Project corridor where construction would occur, as well as existing traffic conditions and general traffic management strategies. It also includes measures to address motor vehicles, including parking, and considerations for pedestrians, bicycles, and construction workers.

Because some of the preliminary traffic count data for this area was outdated, Algonquin hired a traffic engineering consultant to conduct Automatic Traffic Recorder counts for a 72-hour period along the following study area roadways in May 2014:

- Elm Street Dedham – between Providence Highway and Legacy Place driveway;
- Providence Highway Dedham – between Legacy Boulevard signal and Best Buy/Star signal;
- East Street Dedham – north of High Street;
- High Street Dedham – east of East Street;
- Washington Street Dedham – between Lower East Street and Oak Street;
- Grove Street West Roxbury – south of Centre Street; and
- Centre Street West Roxbury – south of Spring Street.

The data gathered was used to evaluate the LOS for these key study area roadways and intersections under existing conditions and during construction of the pipeline lateral over the course of a typical weekday and on Saturday as presented in table 4.9.5-1. Additionally, manual turning movement counts were also collected during the same timeframe at key signalized study area intersections where traffic flow may be affected by some temporary travel lane closures during daytime construction. Capacity analyses at key signalized intersections where capacity would be reduced on a temporary basis during daytime construction hours (High Street/Harris Street/East Street and Spring Street/Centre Street/Temple Street) are presented in table Q-1 in appendix Q. For comparison purposes, this analysis was conducted for both current conditions and the temporary conditions involving lane closures at intersections that would occur on a phased basis during construction.

TABLE 4.9.5-1										
Observed Traffic Counts at Key Locations Along the AIM Project Corridor in Massachusetts										
Location	Weekday	Hourly Traffic Range			Commuter Hours		Saturday	Hourly Traffic Range		
	Daily	Low	High	Average	a.m. Peak	p.m. Peak	Daily	Low	High	Average
<b>Dedham</b>										
Elm Street (eastbound)	6,309	146	640	390	284	640	7,736	120	696	517
Elm Street (westbound)	8,636	240	698	545	500	661	10,768	181	950	687
<b>Total</b>	<b>14,945</b>	<b>386</b>	<b>1,301</b>	<b>936</b>	<b>784</b>	<b>1,301</b>	<b>18,504</b>	<b>301</b>	<b>1,603</b>	<b>1,204</b>
Providence Highway (northbound)	24,178	1,294	1,735	1,545	1,634	1,735	25,667	646	1,993	1,633
Providence Highway (southbound)	22,542	558	1,790	1,377	1,098	1,789	23,669	579	1,925	1,548
<b>Total</b>	<b>46,720</b>	<b>1,992</b>	<b>3,524</b>	<b>2,921</b>	<b>2,732</b>	<b>3,524</b>	<b>49,336</b>	<b>1,225</b>	<b>3,826</b>	<b>3,181</b>
East Street	1,981	67	161	124	141	161	2,298	38	208	152
High Street	16,181	796	1,362	1,101	1,221	1,362	14,522	465	1,089	954
Washington Street (northbound)	11,358	513	802	692	661	795	11,976	250	926	704
Washington Street (southbound)	9,827	431	766	628	576	766	10,698	388	817	702
<b>Total</b>	<b>21,185</b>	<b>944</b>	<b>1,561</b>	<b>1,320</b>	<b>1,237</b>	<b>1,561</b>	<b>22,674</b>	<b>638</b>	<b>1,687</b>	<b>1,405</b>
<b>West Roxbury</b>										
Grove Street	8,569	402	724	597	682	724	7,266	229	589	478
Centre Street	7,282	331	637	513	577	637	6,219	190	506	400

The recently gathered Automatic Traffic Recorder counts indicate that traffic flow within this study area remains relatively constant throughout the day. For the purposes of this Project, construction hours are expected to be a 12-hour day from 7:00 a.m. to 7:00 p.m. when allowable by traffic conditions and as permitted by the various agencies and municipalities having control over the affected roadways. Any work that is to occur during peak traffic hours (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) would be coordinated in advance with the MassDOT, Westwood, Dedham, and/or West Roxbury. To prevent unnecessary delays to the motoring public during Project construction, Algonquin would implement the following measures:

- Reducing the existing roadway cross-sections by no more than one lane on multi-lane roadways during regular working hours. The majority of the study area would be accomplished using this traffic set-up.
- The East Street (Westwood) crossing is expected to occur via underground boring so no traffic management would be required along this roadway.
- The proposed boring work at the easterly end of Rustcraft Road may require a single lane closure of the northbound travel lane. Under such a scenario, traffic flow in each direction would need to alternate under the control of police details at this location.
- For the entire length of the Providence Highway (a commercial street), including the Providence Highway/Elm Street intersection, work would occur during evening hours to minimize disruption to traffic flow.

- Traffic control devices would be placed to allow for access and egress from the West Roxbury Crushed Stone quarry.
- For those areas where sidewalks would need to be closed on a temporary basis, a proposed pedestrian bypass would be provided within the standard details of the traffic management plans. Pedestrian access would be maintained on the same side of the roadway and temporary wheelchair ramps would be provided to ramp the pedestrians from the existing sidewalk to the roadway. The pedestrians would be separated from the travel lanes by drums. If the width is not sufficient to accommodate traffic and pedestrian activity, then pedestrians would be directed to cross to the sidewalk on the opposite side of the street or at the closest adjacent intersection.
- Safe and ready means of ingress and egress to all stores and shops; public, private, and professional offices; and any other businesses or residences in the Project area, both day and night, shall be provided for the project duration.
- Bicyclists currently share the road within the Project study area because there are not separate bicycle facilities currently in place, so bicycles would be accommodated within normal vehicular traffic.
- For the approximately 0.5 mile of work proposed within Grove Street (a residential street), Algonquin would minimize the number of construction workers needing to drive to this area to alleviate the shortage of available on-street parking on Grove Street.

In addition, corridor work along Washington Street (a residential road) may need to be limited to end prior to 4:00 p.m. as this corridor is near capacity during evening peak periods. The exact work schedule and hours for construction would be discussed and agreed upon with the Town of Dedham and City of Boston throughout Project coordination.

As shown in table Q-1 in appendix Q, High Street's intersection with East Street and Harris Street (a residential intersection) currently operates acceptably under peak-hour conditions and during a typical weekday midday period under existing conditions. However, the required lane closures at this intersection would result in significant adverse impacts on traffic operations during the course of construction, especially during the weekday midday period. To reduce impacts at this intersection, and at the request of the Town of Dedham, Algonquin would construct during nighttime hours (7:00 p.m. to 5:00 a.m.). This would not eliminate all traffic-related impacts, but would reduce the traffic impacts at this location to less than significant levels. However, there are residential properties located in close proximity to this intersection, so while nighttime construction would minimize impacts on traffic, it would increase noise-related impacts on these nearby residences.

Similarly, traffic generally operates acceptably at the Spring Street/Centre Street intersection (a residential intersection) in West Roxbury throughout the day under existing conditions. With the planned pipeline construction route, the northbound Centre Street right-turn lane would need to be blocked off temporarily. This would be limited to only one phase of the four traffic management phases planned for this location. Even so, lengthy delays would occur on the northbound Centre Street approach to this intersection. The analysis also indicates that, with some of the temporary lane closures, there would be longer than normal delays that occur as a result of the lost capacity. These delays should generally be limited to a single intersection approach during a given phase of the traffic management plan. Although temporary, these impacts could be significant. Algonquin would have police details in place to monitor traffic conditions and make adjustments as required. To avoid excessive delays at this location, Algonquin would schedule work in the vicinity of this intersection prior to the late afternoon commuter peak period and would consider performing the work at night if recommended and agreed to by the City.

of Boston. However, there are residential properties located in close proximity to this intersection, so while nighttime construction would minimize impacts on traffic, it would increase noise-related impacts on these nearby residences. For these reasons, we conclude that there would be temporary, but significant, impacts at this intersection during construction.

We received specific comments regarding traffic access impacts and congestion during construction of the West Roxbury Lateral. Legacy Place and National Amusements (collectively, Legacy Place) operates a theatre that is part of the 550,000-square-foot Legacy Place shopping center at Elm Street and Route 1 in Dedham and is concerned that the businesses at Legacy Place would be adversely affected by nearby roadway construction, traffic congestion, and access restrictions during construction of the AIM Project. Since issuance of the draft EIS, the pipeline alignment for the West Roxbury Lateral in the Town of Dedham has been realigned in areas to address some of these concerns (see sections 3.5.2.2 and 3.5.3). Based on the revised alignment of the route and the completion of the geotechnical survey work since the issuance of the draft EIS, Algonquin and Legacy Place have also agreed to several construction mitigation measures intended to further minimize the potential impacts on the shopping center. The following construction conditions were agreed upon between Algonquin and Legacy Place:

- Algonquin is no longer proposing to cross the three principal exit and entrance points into Legacy Place (i.e., National Drive, Legacy Boulevard, and Legacy Place Driveway adjacent to LL Bean) and at least one paved lane for each turning movement would be made available at all times.
- Algonquin is committed to completing the installation of the pipeline within Providence Highway in the nighttime (i.e., 9:00 p.m. and 5:00 a.m.), which further reduces the potential impacts on Legacy Place and all along Providence Highway due to the significant reduction in traffic volume at night.
- Algonquin is committed to continued coordination with Legacy as well as other abutters in the area throughout the remainder of the permitting and construction process.
- By shifting the pipeline location along Providence Highway, Algonquin is also able to reduce the extent of the temporary construction workspace by approximately 2.5 acres.

Legacy Place also requested that additional timing restrictions be put in place during weekends, holidays, and school vacations. These additional restrictions could serve to slow down pipeline construction, thereby increasing the overall amount of time traffic-related impacts associated with the Project would occur. We conclude that the measures proposed above would adequately minimize impacts on traffic while allowing construction to proceed as efficiently as possible to reduce the overall length of disruption to traffic patterns. Therefore, we do not find these additional timing restrictions warranted.

Algonquin's traffic management plans continue to be refined pursuant to input from the municipalities. Prior to constructing across town roads, further refinements are expected based on the municipality conditions, which often depend on the time period proposed for construction. Algonquin has indicated that the details of working hours and times and dates of restricted work hours would be developed with local municipalities as part of the road operating permits or other similar approvals. To ensure that the municipalities along the West Roxbury Lateral are aware of the proposed construction schedule, **we recommend that:**

- **Prior to construction of the West Roxbury Lateral, Algonquin should develop and file with the Secretary a detailed construction schedule for each segment of the lateral that includes the proposed construction timeframes (month, week, days), working hours, and times and dates of any restricted work hours. The detailed**

**construction schedule should be shared with each affected municipality. During active in-street construction of the West Roxbury Lateral, the schedule should be updated and provided to the municipalities on a biweekly basis and included in Algonquin's construction status reports required in condition 8.**

We conclude that impacts on traffic during construction along the West Roxbury Lateral would result in localized, unavoidable significant adverse impacts, particularly at the Spring Street/Centre Street intersection. However, with the implementation of Algonquin's *Updated Traffic Management Assessment and Plans for the West Roxbury Lateral*, including the measures described above, and our additional recommendation, impacts resulting from in-street construction would be minimized to the extent possible and would be reduced to less than significant levels at all other locations along the West Roxbury Lateral.

After construction, Algonquin has committed to repaving the Town of Dedham's roadways impacted by pipeline construction from curb-to-curb. No impacts on traffic would occur during operation of the Project.

#### **4.9.6 Project-related Traffic**

In addition to the direct temporary impacts associated with road crossings and in-street construction, the daily commuting of the construction workforce to the Project area could result in short-term impacts on traffic during Project construction. It is estimated that a maximum of 2,693 workers would be working on the proposed pipeline facilities at any one time. These workers would commute typically 6 days a week to and from the construction work area between 7:00 a.m. and 7:00 p.m., resulting in increased traffic in the Project area at specific times. To minimize traffic congestion, Algonquin would encourage construction workers to share rides or use mass transit to the construction work area. Contractors may also provide buses to move workers from common parking areas to the construction work area. Algonquin would also schedule construction work within roadways and specific crossings to avoid commuter traffic and school buses to the greatest extent practical. Additionally, Algonquin has developed site-specific traffic management plans that would be implemented along the Project corridor (see appendix G). We find the general traffic management principles depicted on these to be acceptable and agree that they would help to minimize any disruptions to traffic operations in the Project area.

In addition to the construction workforce, the delivery of construction equipment and materials to the construction work area could temporarily congest existing transportation networks at specific locations. Several construction-related trips would be made each day (to and from the job site) on each spread. This level of traffic would remain consistent throughout the construction period and would typically occur during the early morning hours and evening hours. The route vehicles would take after leaving the construction work area would vary, depending on the location of construction activity. Therefore, materials and equipment could be hauled long distances, resulting in longer drive time. The local public roads in the vicinity of the Project are mostly paved or gravel roads. Construction of the Project could result in short-term impacts along some roads and highways due to the movement and delivery of equipment and materials. Existing public and private road crossings along the proposed pipeline route would be used as the primary means of accessing the right-of-way to the extent feasible. Algonquin propose to use 28 temporary access roads and eight permanent access roads along the pipeline route. Table 2.2.4-1 identifies the locations of new and existing roads associated with the AIM Project.

Although Algonquin would be using existing roads for temporary and permanent access, seven of these roads would require minor upgrades, so they can be used during pipeline construction. Algonquin would also need to construct new permanent access road from the existing North Fall River M&R Station to the new Assonet M&R Station. No improvements would be made to the 29 other temporary and permanent access. Following construction, these roads would be used to access the right-of-way for



ongoing operations and maintenance, but these activities would not significantly increase the use of the access roads or the surrounding public roads. Any road damage that might occur due to the operation of construction equipment would be repaired by Algonquin or its contractors after the pipeline is installed.

As described in the revised traffic management plan for the West Roxbury Lateral, roadway capacity in certain areas would be impacted on a temporary basis. One-lane closures would be utilized when crossing two lanes or more in a single direction. If a lane needs to be closed at intersections, the work would be conducted during off-peak hours so that traffic flows are not constrained at the study area intersections. Therefore, we find the revised plan for the West Roxbury Lateral to be acceptable and conclude that the traffic measures and practices to be implemented during Project construction would maintain appropriate traffic flow and access to abutting residents and businesses at key locations along the Project corridor in the Towns of Dedham and West Roxbury, Massachusetts.

#### **4.9.7 Displacement of Residences and Businesses**

One residence, located near MP 10.7 along the Stony Point to Yorktown Take-up and Relay segment, would be displaced as a result of construction and operation of the AIM Project. The residence was constructed in 1959 within Algonquin's right-of-way. In order to replace the 26-inch-diameter pipeline with a 42-inch-diameter pipeline, while maintaining the same separation distance of 15 feet from the adjacent 30-inch-diameter loop line, the edge of the 42-inch-diameter replacement pipeline would be installed in close proximity to the residence. According to Algonquin, it would not be possible to remove the existing pipeline and excavate the ditch for the 42-inch-diameter pipeline without damage to the residence due to the size of equipment required to complete these tasks. Consequently, Algonquin's right-of-way agent approached the owners and determined that they were willing to sell the property. A purchase and sale agreement has been agreed to by attorneys for both the buyer and the seller.

No businesses would be displaced by the Project. However, impacts on businesses could occur during in-street construction along the West Roxbury Lateral. For example, Legacy Place shopping center has expressed concern that construction of the Project in the roadways adjacent to the shopping center would result in significant impacts on the businesses and stores within the center. To address these issues, Algonquin has developed a Traffic Management Plan for the West Roxbury Lateral to allow for continued access to businesses and stores during construction, including the Legacy Place shopping center (see section 4.9.5.2).

#### **4.9.8 Property Values**

We received some comments regarding the potential effect of the Project on property values. Landowners typically have the following concerns regarding potential impacts on property values: devaluation of property if encumbered by a pipeline easement; being the responsible party for property taxes within a pipeline easement; paying potential landowner insurance premiums for Project-related effects; and negative economic effects resulting from changes in land use. As described in section 4.8.2, Algonquin would acquire easements for both the temporary (construction) and permanent rights-of-way where applicable. With the exception of the West Roxbury Lateral, most of the remaining pipeline segments would be installed within Algonquin's existing right-of-way. Further, the majority of the AIM Project pipeline segments are a replacement of existing pipeline in the same location and would not be encumbered by a new pipeline easement. Also, the majority of the West Roxbury Lateral would be located within streets or public property and, therefore, would not require a pipeline easement on individual properties. Most of the aboveground facilities would be modified within an existing facility owned by Algonquin. Algonquin would compensate the landowners for any new easements, the temporary loss of land use, and any damages. In addition, affected landowners who believe that their property values have been negatively impacted could appeal to the local tax agency for reappraisal and

potential reduction of taxes. The AIM Project would not negatively impact property values outside of the pipeline rights-of-way or aboveground facility boundaries.

In comments on the draft EIS regarding the potential impact on property values from the proposed Project, one commenter requested that the Commission staff expand its analysis on property values to provide quantitative analysis or factual support. Several studies have looked at the effect of pipelines on sales and property values. We acknowledge that most were conducted on behalf of the project developers. However, our analysis did not identify any relevant studies to refute the conclusions presented here. A report by Allen, Williford & Seale, Inc., which was prepared in 2001 for the Interstate Natural Gas Association of America Foundation, Inc., evaluated the impact of natural gas pipelines on real estate in four separate and geographically diverse areas, including two suburban areas and two rural areas crossed by one to multiple natural gas pipelines. The study concluded that there was no significant impact on property sales located along natural gas pipelines nor by the pipeline size or the product carried. Additionally, other studies have reached similar conclusions: PGP Valuation Inc. (2008) for Palomar Gas Transmission Inc.; Ecowest (Fruits, 2008) for the Oregon LNG Project; Diskin, Friedman, Peppas, and Peppas (2011); and Hansen et al. (2006).

Regarding the potential for insurance premium adjustments associated with pipeline proximity, insurance advisors consulted on other natural gas projects reviewed by the FERC indicated that pipeline infrastructure does not affect homeowner insurance rates (FERC, 2008). As such, we find that homeowners' insurance rates are unlikely to change due to construction and operation of the proposed Project. Similarly, regarding the potential impacts on mortgage rates associated with pipeline proximity, we are not aware of any practice by mortgage companies to re-categorize properties nor are we aware of federally insured mortgages being revoked based on proximity to pipelines. In relation to the AIM Project, the existing pipelines have been in place for over 50 years, and according to Algonquin, new residences have been built closer to the existing pipelines since the 1950s without property values or mortgage concerns being raised.

#### 4.9.9 Economy and Tax Revenues

Construction and operation of the Project would have a beneficial impact on the local economy in terms of increased payroll, local materials purchased, and utilization of local vendors. Table 4.9.9-1 provides the estimated payroll associated with construction of the AIM Project. Payroll taxes would also be collected from the workers employed on the Project. Algonquin anticipates that the total payroll for the Project would be approximately \$264,316,027 during the construction phase. Construction payroll would be about \$11,075,046 in Rhode Island, \$127,228,136 in New York, \$89,663,796 in Connecticut, and \$36,349,049 in Massachusetts (see table 4.9.9-1).

TABLE 4.9.9-1		
Socioeconomic Impact Resulting from Construction and Operation of the AIM Project		
State	Construction (Estimated Construction Payroll)	Operation (Estimated Annual Ad Valorem Tax)
New York	\$127,228,136	\$20,070,000
Connecticut	\$89,663,796	\$5,770,000
Massachusetts	\$36,349,049	\$2,360,000 <sup>a</sup>
Rhode Island	\$11,075,046	\$970,000
Total	\$264,316,027	\$29,170,000

<sup>a</sup> Includes the annual property taxes for the City of Boston.

Algonquin estimates that some additional money would be spent locally on the purchase and/or rental of equipment and the purchase of materials and supplies such as stone, sand, concrete, fencing material, and bulk fuel. These and other items required for construction would be purchased, as available, from vendors within Rockland, Westchester, and Putnam Counties, New York; Fairfield, Middlesex, Hartford, and New London Counties, Connecticut; and Norfolk, Suffolk, and Bristol Counties, Massachusetts.

Construction of the AIM Project would also result in increased state and local sales tax revenues associated with the purchase of some construction materials as well as goods and services by the construction workforce. Local communities would benefit from ad valorem taxes, paid annually by Algonquin over the life of the AIM Project (see table 4.9.9-1).

The Project is not expected to have any long-term negative economic impact. The pipeline would be installed underground and any surface impacts, such as damaged pavement, would be repaired. Once installed, the pipeline would not impede normal surface traffic or access to businesses, and most preconstruction property uses would be allowed. The primary long-term impact of the pipeline would be the restrictions associated with the various permanent right-of-way widths, which would preclude specific uses, such as the installation of permanent aboveground structures, over the pipeline. Business owners would be compensated for this encumbrance, if applicable.

We received several comments regarding the potential effect of the Project on home heating costs. Research shows that natural gas prices are a function of market supply and demand. The strength of the economy greatly influences natural gas markets. During periods of economic growth, the increased demand for goods and services from the commercial and industrial sectors generates an increase in natural gas demand. The increased demand can lead to increased production and higher prices. Declining or weak economic growth tends to have the opposite effect. During cold months, residential, and commercial end users consume natural gas for heating, which places upward pressure on prices as demand increases. Because of limited alternatives for natural gas consumption or production in the near term, even small changes in supply or demand over a short period can result in large price movements that bring supply and demand back into balance. Thus, increases in supply tend to result in lower prices, whereas decreases in supply tend to increase prices (DOE/EIA, 2012).

#### **4.9.10 Environmental Justice**

Executive Order 12898 on Environmental Justice recognizes the importance of using the NEPA process to identify and address, as appropriate, any disproportionately high and adverse health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Consistent with Executive Order 12898, the CEQ called on federal agencies to actively scrutinize the following issues with respect to environmental justice (CEQ, 1997a):

- the racial and economic composition of affected communities;
- health-related issues that may amplify project effects on minority or low-income individuals; and
- public participation strategies, including community or tribal participation in the process.

The EPA's Environmental Justice Policies focus on enhancing opportunities for residents to participate in decision making. The EPA (2011) states that Environmental Justice involves meaningful involvement so that: "(1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contributions can influence the regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the decision-makers seek out and facilitate the involvement of those potentially affected."

In accordance with Executive Order 12898 on Environmental Justice, all public documents, notices, and meetings were made readily available to the public during our review of the Project. Algonquin met with many different stakeholders during the initial development of the route, including local residents and affected landowners. These efforts involved a number of open houses with the affected communities and local authorities. Algonquin also established, and is maintaining, a Project website to share Project information with the public.

The applicant also used the FERC's pre-filing process (see section 1.4). One of the major goals of this process is to increase public awareness and encourage public input regarding every aspect of the project before an application is filed. As part of this process, FERC staff participated in several of Algonquin's open houses and hosted several scoping meetings to receive input from the public about the Project. The scoping meetings were held in the Town of Cortlandt, New York; Danbury, Connecticut; Norwich, Connecticut; and the Town of Dedham, Massachusetts. FERC staff also participated in site visits to all the proposed pipeline segments. Interested parties have had, and will be given, opportunities to participate in the NEPA review process. To date, this included the opportunity to participate in the public scoping meetings within the Project area to identify concerns and issues that should be covered in the EIS, and the opportunity to submit written comments about the Project to the FERC. Outreach with Indian tribes is described in section 4.10.1. Stakeholders will have the opportunity to review this draft EIS, participate in public meetings, and provide comments directly to the FERC staff in person or in writing.

In its comments on the draft EIS, the EPA recommended some non-traditional communication techniques to improve success in contacting some of the low income and minority communities along the proposed Project route. In response, Algonquin has agreed to prepare fact sheets in Spanish to be posted on the Project website and would prepare notices regarding public meetings and, in the future, notices regarding construction information in Spanish for the identified environmental justice communities.

#### **4.9.10.1 Demographic and Economic Data**

Environmental Justice Areas or Communities are defined by the EPA as locations that have a "meaningful greater" percentage of minorities than the general population has, or locations in which minorities comprise more than 50 percent of the affected area's population. The environmental justice communities potentially crossed by the Project's pipeline facilities were identified using available 2010 census block group statistics regarding ethnicity, median income, and poverty levels. Table 4.9.10-1 provides demographic statistics for the states and counties that would be affected by the Project. Table 4.9.10-2 provides an overview of the general economic status of these states and the counties.

TABLE 4.9.10-1

**Demographic Statistics for Counties Crossed by Project Facilities in  
New York, Connecticut, and Massachusetts for the AIM Project**

State/County	Total Population	White (percent)	African American (percent)	Native American and Alaskan Native (percent)	Asian (percent)	Native Hawaiian & Pacific Islander (percent)	Other Race (percent)	Hispanic or Latino Origin (percent)	Total Minority <sup>a</sup> (percent)
<b>New York</b>	<b>19,378,102</b>	<b>65.7</b>	<b>15.9</b>	<b>0.6</b>	<b>7.3</b>	<b>0.0</b>	<b>7.4</b>	<b>17.6</b>	<b>41.7</b>
Rockland	311,687	73.2	11.9	0.3	6.2	0.0	5.8	15.7	34.7
Westchester	949,113	68.1	14.6	0.4	5.4	0.0	8.3	21.8	42.6
Putnam	99,710	90.7	2.4	0.2	1.9	0.0	2.8	11.7	17.1
<b>Connecticut</b>	<b>3,574,097</b>	<b>77.6</b>	<b>10.1</b>	<b>0.3</b>	<b>3.8</b>	<b>0.0</b>	<b>5.6</b>	<b>13.4</b>	<b>28.8</b>
Fairfield	916,829	74.8	10.8	0.3	4.6	0.0	6.8	16.9	33.8
Middlesex	165,676	89.2	4.7	0.2	2.6	0.0	1.3	4.7	13.6
Hartford	894,014	72.4	13.3	0.3	4.2	0.0	7.1	15.3	33.9
New London	274,055	82.2	5.8	0.9	4.2	0.1	3.2	8.5	21.7
<b>Massachusetts</b>	<b>6,547,629</b>	<b>80.4</b>	<b>6.6</b>	<b>0.3</b>	<b>5.3</b>	<b>0.0</b>	<b>5.6</b>	<b>9.6</b>	<b>23.9</b>
Norfolk	670,850	82.3	5.7	0.2	8.6	0.0	1.3	3.3	19.6
Suffolk	722,023	56.0	21.6	0.4	8.2	0.0	9.7	19.9	51.9

Source: U.S. Census Bureau, 2010b. Available online at <http://www.census.gov/2010census/popmap/>.

<sup>a</sup> U.S. Census Bureau, 2013a. Available online at [http://factfinder2.census.gov/faces/nam/jsf/pages/community\\_facts.xhtml](http://factfinder2.census.gov/faces/nam/jsf/pages/community_facts.xhtml)  
("minority" refers to people who reported their ethnicity and race as something other than non-Hispanic White).

TABLE 4.9.10-2

**Economic Statistics for Counties Crossed by Project Facilities in  
New York, Connecticut, and Massachusetts for the AIM Project**

State/County	Median Household Income (2008 to 2012)	Persons Below Poverty (2008 to 2012) (percent)
<b>New York</b>	<b>\$57,683</b>	<b>14.9</b>
Rockland	\$86,020	12.8
Westchester	\$81,093	9.3
Putnam	\$95,259	5.8
<b>Connecticut</b>	<b>\$69,519</b>	<b>10.0</b>
Fairfield	\$82,614	8.8
Middlesex	\$76,659	5.9
Hartford	\$64,752	11.5
New London	\$68,310	8.1
<b>Massachusetts</b>	<b>\$66,658</b>	<b>11</b>
Norfolk	\$84,087	6.5
Suffolk	\$52,700	20.7

Source: 2008–2012 American Community Survey 5-Year Estimates

## New York

In New York, environmental justice communities are defined according to the following thresholds: communities where 23.6 percent or more of the individuals within a given census block are living below the poverty line as low-income populations; and/or communities where minorities comprise more than 51.1 percent of the population within a given census block. The use of a 51.1 percent threshold to identify minority populations is within the parameters identified in the EPA Region 2 Interim Environmental Justice Policy, which applies to permits issued by that region, including those in New York. The interim guidance suggests that the minority threshold should be 51.5 percent in urban areas of New York State. The NYSDEC issued guidance for conducting environmental justice analyses for New York State Environmental Quality Review. This guidance establishes a minority community threshold as being equal to or greater than 51.1 percent in an urban area; therefore, this is what was used for this analysis.

None of the counties affected by the Project in New York have minority populations greater than the general EPA guideline of 50 percent; therefore, they are also under the EPA Region 2 guidance of 51.5 percent and the NYSDEC guidance of 51.1 percent. However, two census block groups crossed by the Project in Westchester County do have minority<sup>8</sup> populations greater than these (EPA and NYSDEC) thresholds:

- Census Tract 141, Block Group 4 (Town of Cortlandt, including Buchanan) with a minority population of 57.3 percent; and
- Census Tract 141, Block Group 3 (City of Peekskill) with a minority population of 53.9 percent.

The Stony Point to Yorktown Take-up and Relay segment would cross these two block groups for about 940 feet out of the total segment length of 12.3 miles (8.8 miles of which is in Westchester County). The crossings would occur on either side of where the pipeline crosses Route 9A (near MP 5.8) and would not be located through neighborhoods. FERC staff participated in a site visit to this and the other pipeline segments in New York and also conducted a public scoping meeting in the Town of Cortlandt. Additionally, Algonquin has met with the officials in the City of Peekskill on at least five occasions to discuss the AIM Project, and all landowners have received information about the Project and were invited to attend information meetings by Algonquin and public meetings by the FERC as required by the NEPA process. The proposed pipeline in this area would replace an existing pipeline within the same right-of-way. None of the census blocks crossed have 23.6 percent or more of the individuals within it living below the poverty line.

## Connecticut

None of the counties or census blocks crossed in Connecticut have minority populations greater than the general EPA guideline of 50 percent. However, the State of Connecticut has additional guidelines on what constitutes an environmental justice community, which are defined as:

- a U.S. census block group, as determined in accordance with the most recent U.S. census, for which 30 percent or more of the population consists of low income persons who are

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<sup>8</sup> Minority refers to people who reported their ethnicity and race as something other than non-Hispanic White by itself in the decennial census.

not institutionalized and have an income below 200 percent of the federal poverty level;  
or

- a distressed municipality (Connecticut Environmental Justice Policy, 2012a,b).

The pipeline facilities would not cross any of the 2012 Connecticut Department of Economic and Community Development's List of Distressed Municipalities (Connecticut Department of Economic and Community Development, 2012); however, a portion of the Southeast to MLV 19 Take-up and Relay segment in Danbury (about 1.4 miles or about 30 percent of the total segment length) would be located in a defined census block group (Census Tract 2108, Block Group 3) with 30 percent or more of the population living below 200 percent of the federal poverty level. This census block group is regulated under section 22a–20a of the Connecticut General Statutes (CGS). According to this section of the CGS, the pipeline itself does not qualify as an “affecting facility” under the environmental justice policies of the CTDEEP, as defined. Therefore, Algonquin would not be subject to the requirements for a certificate of environmental compatibility and public need from the Connecticut Siting Council and so filed a petition for a declaratory ruling seeking a “finding of no jurisdiction” from the Connecticut Siting Council for the AIM Project, due to the FERC's federal jurisdiction. The petition was approved on November 7, 2013. Furthermore, the proposed pipeline in this area would replace an existing pipeline within the same right-of-way.

## **Massachusetts**

Suffolk County is the only county crossed in Massachusetts with a minority population greater than the general EPA guideline of 50 percent. However, none of the census blocks crossed by the West Roxbury Lateral within Suffolk County have minority populations greater than 50 percent. Similar to the State of Connecticut, MAEOEEA has established an Environmental Justice Policy (MAEOEEA, 2002) to help address the disproportionate share of environmental burdens experienced by lower-income people and communities of color who, at the same time, often lack environmental assets in their neighborhoods. According to the MAEOEEA, environmental justice populations are those segments of the population defined as neighborhoods (U.S. Census Bureau census block groups) that meet one or more of the following criteria:

- the median annual household income is at or below 65 percent of the statewide median income for Massachusetts;
- 25 percent of the residents are minority;
- 25 percent of the residents are foreign born; or
- 25 percent of the residents are lacking English language proficiency.

According to the 2010 U.S. Census data, 11.4 percent of the Town of Dedham's population in Norfolk County is located in environmental justice block groups that meet the 25 percent minority criteria listed above. Of the 2.9 miles of the West Roxbury Lateral in Dedham, about 1.4 or 47 percent would cross through a portion of one of these groups. In Suffolk County, the Project would pass through environmental justice block groups in West Roxbury that meet two of the above four criteria (25 percent minority, below the 65 percent of the median income, or a combination of the two). All 1.7 miles (100 percent) of the AIM Project pipeline in West Roxbury would cross through these groups and/or traverse along the outer edges of these groups.

In support of the environmental justice populations, the Environmental Justice Policy identifies a number of specific services to be provided to environmental justice populations by the Secretary of the energy and environmental affairs agencies and other related state agencies, including greater public participation and outreach. To date, Algonquin has reached out to the public through various forums, particularly landowners, local community groups, and public officials, to inform them about the Project and has also prepared a Public and Agency Participation Plan for the AIM Project. In addition, FERC conducted a site visit with EPA staff along the entire pipeline route and also hosted a public scoping meeting in Dedham.

#### **4.9.10.2 Impact Analysis**

The construction and operation of the proposed facilities would affect a mix of racial/ethnic and socioeconomic areas in the Project areas as a whole. To minimize overall impacts, Algonquin would collocate the majority of its proposed Project facilities with existing linear and facility infrastructure. In addition, not all impacts identified in this EIS are considered to affect minority or low-income populations. The primary adverse impacts on the environmental justice communities associated with the construction of the AIM Project would be the temporary increases in dust, noise, and traffic from Project construction. These impacts would occur along the entire pipeline route and in areas with a variety of socioeconomic backgrounds.

As part of the Project, Algonquin would implement a series of measures to minimize such impacts (see sections 4.9.5, 4.11.1, and 4.11.2). For instance, Algonquin proposes to employ proven construction-related practices to control fugitive dust such as application of water or other commercially available dust control agents on unpaved areas subject to frequent vehicle traffic. Similarly, the noise control measures that would be implemented by Algonquin during Project construction and operation would ensure that noise attributable to the new aboveground facilities would be either less than 55 decibels on the A-weighted scale (dBA) day-night sound level ( $L_{dn}$ ) at nearby NSAs, or where the noise currently attributable to a particular station is greater than 55 dBA  $L_{dn}$ , the noise attributable to the station modifications would cause no perceptible change to station noise levels. Algonquin has also developed traffic management plans for New York and the West Roxbury Lateral to minimize impacts during construction. In addition, the roads crossed within the identified New York census block groups would be bored, so impacts on traffic would be avoided.

Based on the identified estimated emissions from operation of the proposed Project facilities and review of the modeling analysis, the Project would result in continued compliance with the national ambient air quality standards (NAAQS), which are protective of human health, including children, the elderly, and sensitive populations (see section 4.11.1). The Project facilities would also be designed, constructed, operated, and maintained in accordance with or to exceed PHMSA's minimum federal safety standards in 49 CFR 192. These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, apply to all areas along the proposed pipeline routes regardless of the presence or absence of minority or low income populations.

The AIM Project would also bring economic benefits to the region via added tax revenues and jobs associated with construction and operation of the pipeline facilities in these and other areas along the right-of-way.

Therefore, the AIM Project would not result in any disproportionately high or adverse environmental and human health impacts on minority or low-income communities, or Indian tribes. In its comments on the draft EIS, the EPA concurred with the conclusion that no disproportionate impacts would occur.



## **4.10 CULTURAL RESOURCES**

Section 106 of the NHPA (16 USC 470) requires federal agencies to take into account the effects of their undertakings (including the issuance of Certificates) on properties listed in or eligible for listing in the NRHP and to provide the ACHP an opportunity to comment on the undertaking. Algonquin, as a non-federal party, is assisting the FERC in meeting its obligations under section 106 by preparing the necessary information, analyses, and recommendations as authorized by 36 CFR 800.2(a)(3).

Algonquin conducted archival research and walkover surveys of the proposed Project area to identify historic aboveground properties and locations for additional subsurface testing in areas with potential for prehistoric and historic archaeological sites. Algonquin then conducted field surveys for aboveground properties and archaeological sites.

### **4.10.1 Cultural Resources Consultations**

On September 13, 2013, the FERC sent copies of the NOI for this Project to a wide range of stakeholders, including the ACHP, the NPS, Historic Preservation Field Services Bureau of the NYSOPRHP, the Connecticut State Historic Preservation Office of the Department of Economic and Community Development, the Rhode Island Historical Preservation & Heritage Commission, the Massachusetts Historical Commission, and federally recognized Indian tribes (tribes) that may have an interest in the Project area. The NOI contained a paragraph about section 106 of the NHPA, and stated that we use the notice to initiate consultations with the SHPO, and to solicit their views and those of other government agencies, interested tribes, and the public on the Project's potential effects on historic properties.

In addition to the FERC's notification process, Algonquin or its consultant, Public Archaeology Laboratory (PAL), separately contacted the SHPOs and tribes that might attach cultural or religious significance to cultural resources in the Project area.

#### **4.10.1.1 State Historic Preservation Offices**

Table 4.10.1-1 summarizes communications with the SHPOs. PAL contacted the New York, Connecticut, Rhode Island, and Massachusetts SHPOs to provide them information regarding the Project and to request comments on May 17, 2013, and provided each SHPO with technical proposals for conducting identification surveys in each state on May 23, 2013. The New York SHPO provided comments on the technical proposal on July 19, 2013; the Connecticut SHPO responded on September 19, 2013; the Rhode Island SHPO responded November 1, 2013; and the Massachusetts SHPO indicated by telephone that it would not be commenting until formal application materials are submitted.

On October 25, 2013, PAL provided each SHPO with technical memoranda describing the initial identification survey results and requesting comments. The New York SHPO responded with comments on December 2, 2013, while the other SHPOs have not commented at this time. On February 24, 2014, PAL submitted identification survey technical reports to each SHPO. The New York SHPO provided comments on March 28, 2014; the Connecticut SHPO provided comments on April 8, 2014; the Rhode Island SHPO provided comments on March 5, 2014; and the Massachusetts SHPO provided comments on March 10, 2014. On December 4, 2014, PAL provided the New York SHPO with an addendum to the identification survey technical report, as well as a technical memorandum assessing a cemetery. On December 18, 2014, PAL provided the Connecticut, Massachusetts, and Rhode Island SHPOs additional documentation on outstanding cultural resource investigations. The SHPOs have not yet commented on these additional submittals at this time. Details on specific comments/concurrence for archaeological sites and historic architectural properties are found in section 4.10.2. Where the respective SHPO has concurred with specific findings and recommendations below, we also concur.

TABLE 4.10.1-1

Algonquin and State Historic Preservation Office Correspondence for the AIM Project			
Date	Sender	Recipient	Correspondence
<b>New York</b>			
May 17, 2013	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter introducing Project and initiating consultation.
May 23, 2013	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter with technical proposal for archaeological survey.
July 19, 2013	Brian Yates, NY SHPO	Gregory Dubell, PAL	Response to technical proposal.
August 2, 2013	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter with copy of meeting notes from July 17, 2013 meeting.
August 12, 2013	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter containing draft copies of Resource Reports 1 and 10.
October 25, 2013	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter requesting review of technical memoranda and unanticipated discovery plan (UDP).
December 2, 2013	Brian Yates, NY SHPO	Gregory Dubell, PAL	Letter with review comments on documents submitted on October 25, 2013.
December 3, 2013	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter providing Resource Reports 1–12.
December 11, 2013	Brian Yates, NY SHPO	Gregory Dubell, PAL	Letter providing comments on Resource Report 4.
January 13, 2014	Gregory Dubell, PAL	Brian Yates, NY SHPO	Email requesting further survey work following previously reviewed methods.
February 24, 2014	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter requesting review of technical reports and revised UDP.
March 4, 2014	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter providing Resource Reports 1–12.
March 28, 2014	Brian Yates, NY SHPO	Gregory Dubell, PAL	Letter with review comments on technical reports.
April 18, 2014	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter with proposal to perform Phase II site evaluations.
October 20, 2014	Brian Yates, NY SHPO	Gregory Dubell, PAL	Letter with review comments on Phase II site evaluation proposal.
December 4, 2014	Gregory Dubell, PAL	Ruth Pierpont, NY SHPO	Letter requesting review of technical report addendum and technical memorandum.
<b>Connecticut</b>			
May 17, 2013	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter introducing Project and initiating consultation.
May 23, 2013	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter with technical proposal for archaeological survey.
July 29, 2013	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter with addendum to technical proposal for archaeological survey.
August 12, 2013	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter containing draft copies of Resource Reports 1 and 10.
September 16, 2013	Stacey Vairo, CT SHPO	Gregory Dubell, PAL	Letter commenting on archaeological survey proposal.
October 25, 2013	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter requesting review of technical memoranda and UDP.
December 3, 2013	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter providing Resource Reports 1–12.
January 13, 2014	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Email requesting further survey work following previously reviewed methods.
February 24, 2014	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter requesting review of technical reports.
March 4, 2014	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter providing Resource Reports 1–12.
April 8, 2014	Stacey Vairo	Mike Tyrrell, Algonquin	Letter with review comments on technical reports.
April 8, 2014	Stacey Vairo	Gregory Dubell, PAL	Letter requesting technical edits to the technical reports.
April 9, 2014	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter with proposal to perform Phase II site evaluations.
April 16, 2014	Stacey Vairo, CT SHPO	Mike Tyrrell, Algonquin	Letter providing comments on Phase II site evaluation proposal.
June 3, 2014	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter providing progress memo on Phase II site evaluations and additional Phase I survey.

TABLE 4.10.1-1 (cont'd)

<b>Algonquin and State Historic Preservation Office Correspondence for the AIM Project</b>			
<b>Date</b>	<b>Sender</b>	<b>Recipient</b>	<b>Correspondence</b>
June 4, 2014	Catherine Labadia, CT SHPO	Gregory Dubell, PAL	Email acknowledging phone call regarding progress memo.
June 6, 2014	Gregory Dubell, PAL	Stacey Vairo, CT SHPO	Letter providing phone notes from call with CT SHPO on June 4, 2014.
December 18, 2014	Gregory Dubell, PAL	Mary B. Dunne, CT SHPO	Letter requesting review of cultural resources overview table, addendum to technical report, and technical memorandum.
<b>Rhode Island</b>			
May 17, 2013	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter introducing project and initiating consultation.
May 23, 2013	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter with technical proposal for archaeological survey.
August 12, 2013	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter containing draft copies of Resource Reports 1 and 10.
October 25, 2013	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter requesting review of technical memoranda and UDP.
November 1, 2013	Charlotte Taylor, RI SHPO	Gregory Dubell, PAL	Letter providing permit for archaeological survey.
December 3, 2013	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter providing Resource Reports 1–12.
February 24, 2014	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter requesting review of technical reports and information on historic architectural properties.
March 4, 2014	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter providing Resource Reports 1–12.
March 5, 2014	Edward Sanderson, RI SHPO	Gregory Dubell, PAL	Letter commenting on technical reports.
March 5, 2014	Edward Sanderson, RI SHPO	Gregory Dubell, PAL	Letter commenting on UDP.
April 1, 2014	Edward Sanderson, RI SHPO	Gregory Dubell, PAL	Letter providing review of historic architectural survey findings.
April 8, 2014	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter with application for permit to conduct Phase II site evaluation.
December 18, 2014	Gregory Dubell, PAL	Edward Sanderson, RI SHPO	Letter requesting review of cultural resources overview table and Phase II site evaluation report.
<b>Massachusetts</b>			
May 17, 2013	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter introducing project and initiating consultation.
May 23, 2013	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter with technical proposal for archaeological survey.
August 12, 2013	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter containing draft copies of Resource Reports 1 and 10.
October 25, 2013	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter requesting review of technical memoranda and UDP.
December 3, 2013	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter providing Resource Reports 1–12.
January 27, 2014	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter containing phone notes from call with MA SHPO on October 25, 2013.
February 24, 2014	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter requesting review of technical reports and revised UDP.
March 4, 2014	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter providing Resource Reports 1–12.
March 10, 2014	Brona Simon, MA SHPO	Kimberly Bose, FERC	Letter commenting on technical reports, memorandum, and UDP.
March 10, 2014	Brona Simon, MA SHPO	Deborah Cox, PAL	Letter commenting on technical reports, memorandum, and UDP.
March 24, 2014	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter with copies of reports.
July 17, 2014	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter requesting review of technical proposal for archaeological identification survey.
December 18, 2014	Gregory Dubell, PAL	Brona Simon, MA SHPO	Letter requesting review of cultural resources overview table, technical report, and addendum to technical report.

#### **4.10.1.2 Consultation Parties**

Between May 2013 and February 2014, Algonquin consulted with several governmental organizations, non-governmental organizations, non-federally recognized tribes, and municipal historic preservation commissions in New York and Massachusetts to provide them an opportunity to comment on the proposed Project. These consulting parties included:

- Ramapough Conservancy;
- Massachusetts Board of Underwater Archaeological Resources;
- Massachusetts Department of Conservation and Recreation;
- Boston Landmarks Commission;
- Brockton Historical Commission;
- Dedham Historical Commission;
- Freetown Historical Commission;
- Middleborough Historical Commission;
- Medford Historical Commission;
- Needham Historical Commission;
- New Bedford Historical Commission;
- Norwood Historical Commission;
- Wellesley Historical Commission;
- Westwood Historical Commission;
- Eastern Pequot Tribal Nation;
- Golden Hill Tribe of the Paugussett Indian Nation;
- Ramapough Lenape Indian Nation;
- Schaghticoke Tribal Nation;
- Connecticut Indian Affairs Council; and
- Massachusetts Commission on Indian Affairs.

The Boston Landmarks Commission commented on the archaeological overview survey methodology. Algonquin provided the archaeological overview survey and historic architectural properties overview/identification survey technical reports to the relevant Massachusetts consulting parties for review. No comments have been received to date from the remaining consulting parties.

#### **4.10.1.3 Federally Recognized Indian Tribes Consultations**

On May 17, 2013, Algonquin wrote to nine tribes (the Delaware Nation of Oklahoma, Delaware Tribe of Indians, Mashantucket (Western) Pequot Tribal Nation, Mashpee Wampanoag Indian Tribe, Mohegan Indian Tribe, Narragansett Indian Tribe, Saint Regis Mohawk Tribe, Stockbridge-Munsee Community Band of Mohican Indians, and Wampanoag Tribe of Gay Head (Aquinnah)) in the attempt to identify any concerns about properties of traditional religious or cultural significance that may be affected by this undertaking.

The Delaware Nation of Oklahoma responded that they would like to be apprised of changes in the expansion or inadvertent discoveries. The Delaware Tribe of Indians responded that there are no religious or culturally significant sites in the Project area and they defer comments to the SHPOs; in addition, the tribe stated that it wishes to continue as a consulting party. The Mashantucket (Western) Pequot Tribal Nation reviewed the survey reports and wished to continue receiving information regarding the Project. The Mohegan Indian Tribe sent a representative to accompany the archaeological field crew for a portion of the Project in Connecticut and identified areas of interest that may need further

consideration. The Narragansett Indian Tribe expressed an interest in the Project and were going to send a representative to accompany the archaeological field crew in Rhode Island. Stockbridge–Munsee Community Band of Mohican Indians responded that they are not aware of any cultural sites but wished to continue receiving information regarding the Project. The Wampanoag Tribe of Gay Head (Aquinnah) responded that they wished to continue to be consulted during Project planning activities and accompanied an archaeological field crew during a portion of the identification fieldwork and identified areas of interest. The Mashpee Wampanoag Tribe responded that, because of known archaeological sites in the Project area, the tribe would require periodic visits by tribal monitors during ground-disturbing activities and requested at least a 14-day notice prior to the start of construction as well as contact information for the construction contractor/project manager. No response has been received from the Saint Regis Mohawk Tribe. Table R-1 in appendix R provides a summary of consultations with federally recognized tribes.

On September 13, 2013, the FERC sent copies of the NOI to all tribes with a known interest in the area. In addition, on November 25, 2013, the FERC wrote letters to the federally recognized tribes to request their comments on the proposed Project. An email was sent to each of these tribes on February 4, 2014, to ensure that the tribes had received copies of the cultural resources studies for the Project and to seek comments. In response to these emails, three tribes (Mohegan Indian Tribe, Wampanoag Tribe of Gay Head (Aquinnah), and Mashantucket (Western) Pequot Tribal Nation) requested to meet with the FERC. On March 12, 2014, the FERC met with these three tribes as well as the Narragansett Indian Tribe to discuss their concerns about the Project. The tribes expressed concerns about utility projects, including natural gas pipelines and effects on ceremonial stone landscapes and wanted to be involved with the initial cultural resources surveys for projects in the vicinity. The tribes were disappointed that site identification studies had begun without their involvement. Beginning April 3, 2014, the FERC hosted regular (mostly weekly) conference calls with these four tribes, Algonquin, and Algonquin's cultural resources consultant (PAL) to discuss schedule and coordination for pending cultural resources field investigations and any areas within the APE that the tribes had concerns and wanted to investigate. When calls could not be scheduled, Algonquin representatives provided the parties weekly updates via email on upcoming and planned field work, as well as a summary of work completed the prior week. Although representatives of some of the tribes who participated in the calls accompanied PAL during a number of the Phase II site evaluations, no specific areas of concerns within the APE were raised during the phone calls by the tribes. Because no concerns were being raised by tribes regarding historic properties impacted by the AIM Project, archaeological fieldwork was concluding, and challenges to continue to attend calls, FERC staff decided to conclude the weekly calls, but clearly expressed that if any concerns or questions arose that tribes should contact FERC staff or Algonquin to discuss.

In a meeting with the United South and Eastern Tribes Inc. (USET), on September 30, 2014, it was brought to FERC staff's attention that certain stone features of interest to tribes may be present near or within the AIM Project. On October 17, 2014, FERC staff, Algonquin, and representatives from the Narragansett Tribe, Mohegan Indian Tribe, Wampanoag Tribe of Gay Head (Aquinnah), and Oneida Nation met in Brewster, New York to discuss ceremonial stone landscapes. In a memo filed on October 29, 2014, FERC staff requested that the Tribes work with Algonquin to identify potential features that may have cultural affiliation to tribes within the APE. In a letter dated October 30, 2014, USET, which includes member tribes such as the Narragansett Tribe, Mohegan Indian Tribe, Wampanoag Tribe of Gay Head (Aquinnah), Mashantucket (Western) Pequot Tribal Nation, and Oneida Nation, among others, stated concerns regarding ceremonial stone landscapes in Brewster, New York that may be potentially impacted by the AIM Project and provided the tribes' account of the October 17, 2014 site visit. Algonquin responded in a letter dated November 14, 2014, providing documentation of the extensive tribal outreach that has occurred for the AIM Project, their opinion regarding stone landscapes, and an example survey scope of work for ceremonial stone landscapes. In separate letters, dated November 24, the Mohegan Indian Tribe and the Narragansett Tribe provided a rebuttal to Algonquin's November 14,

2014, filing. The tribes emphatically stated they do not agree with Algonquin's position and found the filing to be culturally insensitive to tribal expertise. Additionally USET, in a letter dated November 25, 2014, stated concerns about the company's filing and requested a meeting with FERC. Although the tribes have expressed concerns and proposed to conduct investigations for ceremonial stone landscapes, surveys have not been initiated. The Commission has made a reasonable and good faith effort to identify Indian tribes to be consulted for the AIM Project, and ensured that consultation in the section 106 process provided the Indian tribes a reasonable opportunity to identify its concerns about historic properties; advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; and articulate its views on the undertaking's effects on such properties. Consultation is ongoing.

#### **4.10.2 Results of Cultural Resources Surveys**

Algonquin surveyed a 200-foot-wide corridor for archaeological sites. The pipeline construction workspace, ATWS, and permanent right-of-way would be contained within this surveyed corridor. Surveys for historic architectural properties were conducted in a 300-foot-wide area that extended 150 feet on either side of the pipeline centerline. For aboveground facilities (compressor stations and M&R stations), the survey area included properties within view of the constructed facility. The APE for access roads would be defined based on the width needed to make the roads usable for construction, and the APE for contractor yards would include the footprint of those yards. Table 4.10.2-1 provides a summary of cultural resource investigations and work that is pending for each state.

##### **4.10.2.1 New York**

###### **Pipeline Facilities**

In New York, regarding the identification survey coverage, the Haverstraw to Stony Point Take-up and Relay segment has received 83 percent coverage for archaeology, the Stony Point to Yorktown Take-up and Relay segment has received 99 percent coverage for archaeology, and the Southeast to MLV 19 Take-up and Relay segment has had 100 percent survey for archaeology. Each segment has received 100 percent identification survey coverage for historic architecture. Reports presenting the results of this survey work were submitted to the SHPO on February 24, 2014 and December 4, 2014. The findings for each segment are summarized below.

###### Haverstraw to Stony Point Take-up and Relay

Three archaeological sites (two pre-contact, one dating to the Archaic period but also containing post-contact artifacts, the other undetermined; and one post-contact cemetery) were identified along the Haverstraw to Stony Point Take-up and Relay survey corridor. Two of the sites are recommended potentially eligible for the NRHP and are recommended for further testing. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014. Site evaluation would be undertaken at these two sites to evaluate their eligibility for the NRHP. The remaining site, Letchworth Village Cemetery, has been determined eligible for the NRHP (New York SHPO unique site number [USN] 08702.000274). The proposed AIM Project workspace extends approximately 15 meters (50 feet) into the cemetery property, but archaeological survey of this workspace conducted in November 2014 and submitted to the New York SHPO on December 4, 2014 has determined that no graves are present in the workspace. In addition, eight stone walls were recorded within the Haverstraw to Stony Point Take-up and Relay survey corridor. These walls have been interpreted as former property boundaries, and where avoidance is not possible, documentation and restoration would be undertaken.

TABLE 4.10.2-1

Cultural Resources Investigations for the AIM Project			
State/Type of Investigation	Report of Investigation	Percent Surveyed	Acreage remaining
<b>New York</b>			
Phase I archaeological identification survey for pipeline corridors	Nichole Gillis et al. (February 2014). <i>Archaeological Overview and Identification Survey, Algonquin Incremental Market (AIM) Project: Haverstraw T&amp;R, Stony Point T&amp;R, and Southeast T&amp;R, Buchanan, Cortlandt, Haverstraw, Peekskill, Southeast, Stony Point, and Yorktown, New York</i>	95.7	16.6
Phase I archaeological identification survey for M&R and compressor stations	Joseph N. Waller, Jr., and Jennifer Ort (February 2014). <i>Algonquin Incremental Market (AIM) Project: Archaeological Overview and Identification Surveys, New York Metering &amp; Regulating and Compressor Stations, Cortlandt, Peekskill, Southeast, and Stony Point, New York</i>	100	<sup>a</sup>
Phase I architectural identification survey for all facilities	Kathleen M. Miller et al. (February 2014). <i>Historic Architectural Properties Overview and Identification Survey, Algonquin Incremental Market (AIM) Project: Haverstraw T&amp;R, Stony Point T&amp;R, and Southeast T&amp;R, and M&amp;R and Compressor Stations, Buchanan, Cortland, Haverstraw, Peekskill, Southeast, Stony Point, Tompkins Cove, Verplanck, and Yorktown, New York</i>	100	0
Phase I archaeological identification survey for the Southeast Compressor Station, Pipe and Contractor Ware Yards, and Access Roads	PAL (December 2014). <i>Addendum #1, Archaeological and Historic Architectural Properties, Overview and Identification Surveys, Algonquin Incremental Market (AIM) Project: New York Facilities</i>	100	0
Assessment of Existing Conditions and Potential Impacts	PAL (November 17, 2014). <i>Technical Memorandum AIM Project – Haverstraw T&amp;R, Old Letchworth Village Cemetery, Stony Point, New York, Assessment of Existing Conditions and Potential Impacts</i>	100	0
<b>Remaining investigations</b>			
Phase II site evaluation of Westchester Wetlands Site	Pending	NA	NA
<b>Connecticut</b>			
Phase I archaeological identification survey for pipeline corridors	Nichole Gillis et al. (February 2014). <i>Archaeological Overview and Identification Survey, Algonquin Incremental Market (AIM) Project: Southeast T&amp;R, Cromwell Loop Extension, E-1 System T&amp;R, and E -1 System Loop, Cromwell, Danbury, Franklin, Lebanon, Montville, Norwich, and Rocky Hill, Connecticut</i>	<100	7.8
Phase I archaeological identification survey for M&R and compressor stations	Joseph N. Waller, Jr. (February 2014). <i>Algonquin Incremental Market (AIM) Project: Archaeological Overview and Identification Surveys, Connecticut Metering &amp; Regulating and Compressor Stations, Berlin, Chaplin, Cromwell, Danbury, Farmington, Glastonbury, Guilford, Middletown, Montville, North Haven, Norwich, Plainville, Pomfret, Putnam, Southbury, Waterbury, Windham, Connecticut</i>	100	0
Phase I architectural identification survey for all facilities	Kathleen M. Miller et al. (February 2014). <i>Historic Architectural Properties Overview and Identification Survey, Algonquin Incremental Market (AIM) Project: Southeast T&amp;R, Cromwell Loop Extension, E-1 System T&amp;R, and E-1 System Loop, and M&amp;R and Compressor Stations, Cromwell, Chaplin, Danbury, Farmington, Franklin, Glastonbury, Greenville, Guilford, Lebanon, Middletown, Montville, North Haven, Norwich, Pomfret, Putnam, Rocky Hill, Southbury, Waterbury, and Windham, Connecticut</i>	100	0
Phase I archaeological identification survey for Line 36A (Cromwell) Loop Extension, E-1 System T&R, Greenville M&R Station, Pipe and Contractor Ware Yards, Access Roads	PAL (December 2014). <i>Addendum #1, Archaeological and Historic Architectural Properties, Overview and Identification Surveys, Algonquin Incremental Market (AIM) Project: Connecticut Facilities</i>	100	0
Ground Penetrating Radar Survey	PAL (November 2014). <i>Technical Memorandum, Algonquin Incremental Market (AIM) Project - E-1 System T&amp;R Trumbull Cemetery, Lebanon, Connecticut. Ground Penetrating Radar Survey</i>	100	0

TABLE 4.10.2-1 (cont'd)

Cultural Resources Investigations for the AIM Project			
State/Type of Investigation	Report of Investigation	Percent Surveyed	Acreage remaining
<b>Rhode Island</b>			
Phase I archaeological identification survey for compressor station	Joseph N. Waller, Jr. (February 2014). <i>Algonquin Incremental Market (AIM) Project: Archaeological Identification (Phase I[c]) Survey, Burrillville Compressor Station, Burrillville, Rhode Island</i>	100	0
Phase I archaeological identification survey for compressor station	Letter report to RI SHPO (February 24, 2014)	100	0
Phase II site evaluation of RI 2568	Joseph N. Waller, Jr. (December 2014). <i>Phase II Archaeological Site Examination of the Algonquin Lane Site (RI 2568), Algonquin Incremental Market Project – Burrillville Compressor Station, Burrillville, Rhode Island</i>	100	NA
<b>Massachusetts</b>			
Phase I archaeological overview survey for pipeline corridor	Jennifer Banister and Suzanne Cherau. (February 2014). <i>Archaeological Overview (Reconnaissance) Survey, Algonquin Incremental Market (AIM) Project: West Roxbury Lateral, Boston (West Roxbury), Dedham, and Westwood, Massachusetts</i>	100	0
Phase I archaeological overview survey for M&R stations	Joseph N. Waller, Jr. (February 2014). <i>Archaeological Overview (Reconnaissance) Survey, Algonquin Incremental Market (AIM) Project: Metering &amp; Regulating Stations, Boston, Brockton, Freetown, Middleborough, Medford, Needham, New Bedford, Norwood, and Wellesley, Massachusetts</i>	100	0
Phase I architectural identification survey for all facilities	Kathleen M. Miller et al. (February 2014). <i>Historic Architectural Properties Overview and Identification Survey, Algonquin Incremental Market (AIM) Project: West Roxbury Lateral and M&amp;R and Compressor Stations, Boston (West Roxbury), Brockton, Dedham, Freetown, Medford, Middleborough, Needham, New Bedford, Norwood, Wellesley, and Westwood, Massachusetts</i>	100	0
Phase I archaeological identification survey, West Roxbury Lateral	PAL (December 2014). <i>Results of Additional Data Collection and Archaeological Assessment Addendum (Reconnaissance) Report, Algonquin Incremental Market (AIM) Project: West Roxbury Lateral, Boston (West Roxbury), Dedham, and Westwood, Massachusetts</i>	100	0
Phase I identification survey of West Roxbury M&R station	PAL (October 2014). <i>Intensive (Locational) Archaeological Survey, Algonquin Incremental Market (AIM) Project: West Roxbury Lateral M&amp;R Station, Boston (West Roxbury), Massachusetts</i>	NA	NA
<sup>a</sup> NA = not applicable.			

Eight aboveground historic resources were identified in the APE associated with the Haverstraw to Stony Point Take-up and Relay segment. Four of these are residences and considered not eligible for the NRHP. Two resources, Harriman State Park (NY-A; New York SHPO USN 08702.000044 – USN 08702.000176) and Letchworth Village Cemetery (NY-2), have been determined eligible for the NRHP. The remaining two resources, Palisades Interstate Parkway (NY-6; New York SHPO USN 08702.000179) and Stony Point District School, No. 4 (NY-7; New York SHPO USN 08705.000083) are listed in the NRHP. The assessment indicates that the AIM Project would have no effect on the significance of the Palisades Interstate Parkway, Stony Point District School No. 4, or Harriman State Park. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014. Archaeological investigations within the AIM workspace indicate that the Project would have no effect on Letchworth Village Cemetery. Comments from the New York SHPO regarding effects on Letchworth Village Cemetery are pending.



### Stony Point to Yorktown Take-up and Relay

Fourteen archaeological sites were identified along the Stony Point to Yorktown Take-up and Relay survey corridor, half of which are pre-contact sites (one dating to the Archaic period, the others undetermined) and half post-contact, ranging from the mid-19<sup>th</sup> to mid-20<sup>th</sup> centuries. Seven of the sites have been recommended not eligible for the NRHP. Seven of the sites are recommended potentially eligible for the NRHP and would require further testing. Avoidance has been recommended in one case. In addition, 48 stone walls were recorded within the Stony Point to Yorktown Take-up and Relay survey corridor. These walls have been interpreted as former property boundaries and, where avoidance is not possible, documentation and restoration is recommended. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014. Site evaluation would be conducted at the seven sites recommended eligible for the NRHP to evaluate their NRHP eligibility. A comment was received about a lime kiln site within Sylvan Glen Park. The archaeological survey identified a portion of this site within the Project area, and it is one of the sites to be evaluated.

Twenty-seven aboveground historic resources were identified in the APE associated with the Stony Point to Yorktown Take-up and Relay segment. Of those, 26 are recommended not eligible for the NRHP. The remaining resource, the Fresh Air Association House of St. John the Divine (NY-C), is recommended potentially eligible for the NRHP. While the Project has no potential to impact standing structures associated with the Fresh Air Association House of St. John Divine Complex, archaeological remains that might contribute to the significance of the property are located within the impact area of the pipeline. The examination of this resource for potentially significant archaeological remains would be included in the evaluation noted above. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

### Southeast to MLV 19 Take-up and Relay

No archaeological resources were identified along the Southeast to MLV 19 Take-up and Relay survey corridor and no further testing was recommended. However, three stone walls were recorded. These walls have been interpreted as former property boundaries and, where avoidance is not possible, documentation and restoration is recommended. No historic resources were identified in the APE. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

### **Aboveground Facilities**

There are two compressor stations (Southeast and Stony Point Compressor Stations) and three M&R station modifications (Cortlandt, Peekskill, and Stony Point M&R Stations) associated with the Project in New York. Most of these facilities were reviewed and determined to have low potential for intact archaeological resources and no identification surveys were undertaken there. Archaeological field surveys were conducted for the Southeast Compressor Station, Stony Point Compressor Station, and the Cortlandt M&R Station. All facilities also were surveyed for historic architectural properties with the Project's APE. The other aboveground facilities in New York (MLVs, launcher/receivers, cross over piping) would be modified or constructed within the proposed pipeline rights-of-way and are, therefore, included in the discussion of pipeline facilities. A summary of the survey findings for each facility is presented below.

#### Southeast Compressor Station

No archaeological resources were identified in the proposed Southeast Compressor Station site, and no historic resources were identified in the APE. No further studies were recommended. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

#### Stony Point Compressor Station

No archaeological resources were identified in the proposed Stony Point Compressor Station site, and no historic resources were identified in the APE. No further studies were recommended. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

#### Stony Point M&R Station

One historic resource was identified in the APE: the NRHP-listed Stony Point District School, No. 4 (NY-7; New York SHPO USN 08705.000083). The assessment indicates the Project would have no effect on the significance of the resource. No further studies were recommended. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

#### Peekskill M&R Station

Four historic resources, all of which were considered not eligible for the NRHP, were identified in the APE. No further studies were recommended. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

#### Cortlandt M&R Station

No archaeological resources were identified in the proposed Cortlandt M&R Station site, and no historic resources were identified in the APE. No further studies were recommended. The New York SHPO agreed with the recommendations in a letter dated March 28, 2014.

### **4.10.2.2 Connecticut**

#### **Pipeline Facilities**

In Connecticut, regarding the identification survey coverage, the Southeast to MLV 19 Take-up and Relay has received 100 percent coverage for both archaeology and historic architecture. The E-1 System Lateral Take-up and Relay segment has received over 99 percent coverage for archaeology and 100 percent coverage for historic architecture. The Line-36A Loop Extension has received 100 percent coverage for archaeology and 100 percent coverage for historic architecture. The E-1 System Lateral Loop has received 100 percent identification survey coverage for both archaeology and historic architecture. The findings for each segment are summarized below.

#### Southeast to MLV 19 Take-up and Relay

The archaeological survey of this Project facility in Connecticut identified a single archaeological site, dating to the early 19<sup>th</sup> century. The site was recommended not eligible for the NRHP and no further work was recommended. In addition, 36 stone walls were recorded within the Southeast to MLV 19

Take-up and Relay survey corridor. These walls have been interpreted as former property boundaries and, where avoidance is not possible, documentation and restoration is recommended. A survey for historic architectural properties located 13 resources that were 50 years old or older within the Project's APE. Only one of these resources, a residence and barn in Danbury, is recommended eligible for the NRHP. However, the Project would have no effect on this resource. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

#### Line-36A Loop Extension

The archaeological survey of this Project facility identified a single pre-contact archaeological site. The site was recommended not eligible for the NRHP and no further work was recommended. A survey for historic architectural properties located four resources that were 50 years old or older within the Project's APE; all four were recommended not eligible for the NRHP and no further work was recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

#### E-1 System Lateral Take-up and Relay

A total of 18 archaeological sites, dating from the pre-contact period (one Early Archaic, one Middle Archaic, five Late Archaic, and nine undefined) and post-contact period (a mill site dating to the early 18<sup>th</sup> century and a domestic site likely dating from the mid-18<sup>th</sup> to 19<sup>th</sup> centuries), as well as a single cemetery were identified during the archaeological survey of the E-1 System Lateral Take-up and Relay segment. The cemetery, Trumbull Cemetery, which has grave markers from about 1700 to 1850, is already listed on the State Register of Historic Places and would be avoided. Sixteen sites are recommended for evaluation to determine their eligibility for the NRHP, and the sites would be investigated to make that determination. The remaining two sites are recommended not eligible for the NRHP and no further work is recommended. In addition, 28 stone walls were recorded within the E-1 System Lateral Take-up and Relay survey corridor. These walls have been interpreted as former property boundaries and, where avoidance is not possible, documentation and restoration would be undertaken. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014. Site evaluation investigations are pending for the 16 sites. In November 2014, an archaeological survey for an alignment change identified another pre-contact period site from the Late Archaic period. The report for this work was provided to the Connecticut SHPO on December 4, 2014. This site is recommended for evaluation to determine its eligibility for the NRHP if the site cannot be avoided. Site evaluation or avoidance plan for this site is pending.

A survey for historic architectural properties found 13 additional properties within the Project's APE, 3 of which are recommended eligible for the NRHP: Jonathan Metcalf House in Lebanon (Statewide Historic Resource Inventory No. 71-5); a residence on Trumbull Highway in Lebanon (Statewide Historic Resource Inventory No. 71-125; 113); and a residence and barn in Franklin. The Project would have no effect on these resources. The Connecticut SHPO considers seven of the remaining 10 architectural properties that were recommended not eligible as potentially eligible for the NRHP, but agreed that there would be no adverse effect on potentially eligible resources in a letter dated April 8, 2014.

#### E-1 System Lateral Loop Extension

A single archaeological site, a pre-contact site of unknown temporal association, was identified on the E-1 System Lateral Loop Extension. The site was recommended for evaluation to determine its NRHP eligibility. The Connecticut SHPO agreed with the recommendation of additional testing of this site in a letter dated April 8, 2014. Site evaluation of the site is pending. In addition, nine stone walls

were recorded within the E-1 System Lateral Loop survey corridor. These walls have been interpreted as former property boundaries and, where avoidance is not possible, documentation and restoration is recommended. Seven historic architectural properties were identified within the APE, but none are recommended eligible for the NRHP. The Connecticut SHPO considers four of these architectural properties potentially eligible for the NRHP, but agreed that there would be no adverse effect on potentially eligible resources in a letter dated April 8, 2014.

## **Aboveground Facilities**

There are 18 aboveground facilities located in Connecticut. Work at the Oxford Compressor Station would consist of modifications within the existing compressor building and would not require any temporary workspace; therefore, it is not included in this discussion. Eleven of the facilities (West Danbury M&R Station, Waterbury M&R Station, North Haven M&R Station, Farmington M&R Station, Glastonbury M&R Station, Greenville M&R Station, Middletown M&R Station, Salem Pike M&R Station, Montville M&R Station, Pomfret M&R Station, and Putnam M&R Station) were reviewed and determined to have low potential for intact archaeological resources. No identification surveys were conducted. The Connecticut SHPO agreed with this approach in a letter dated April 8, 2014. Field investigations for archaeological sites were carried out at the remaining facility locations where there was sensitivity for containing intact archaeological sites. All facilities also were surveyed for historic architectural properties within the Project's APE. A summary of the findings for each facility is presented below.

### Cromwell Compressor Station

An archaeological survey of this station identified no sites that were eligible for the NRHP, and no further archaeological work was recommended. Four historic architectural properties were identified within the APE, but none are considered eligible for the NRHP. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

### Chaplin Compressor Station

An archaeological survey of this station identified no sites that were eligible for the NRHP, and no further archaeological work was recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

### Oakland Heights M&R Station

One archaeological site was identified during the field investigations at this new station site, an undetermined pre-contact site. This site has been recommended not eligible for the NRHP and no further archaeological work was recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

### Southbury M&R Station

An archaeological survey of this station identified no sites that were eligible for the NRHP, and no further archaeological work was recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

#### Waterbury M&R Station

The survey for historic architectural properties identified five resources within the APE. None of these resources was recommended eligible for the NRHP. No further studies were recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

#### North Haven M&R Station

The survey for historic architectural properties identified two resources within the APE. Neither of these resources was recommended eligible for the NRHP. No further studies were recommended. The Connecticut SHPO agreed with Algonquin's recommendations in a letter dated April 8, 2014.

#### Guilford M&R Station

An archaeological survey of this station identified no sites that were eligible for the NRHP, and no further archaeological work was recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

#### Glastonbury M&R Station

The survey for historic architectural properties identified six resources within the APE and none of these resources was recommended eligible for the NRHP. No further studies were recommended. The Connecticut SHPO responded that one resource, CT-38, may be eligible for the NRHP, but concluded that no historic architectural properties would be affected in a letter dated April 8, 2014.

#### Greenville M&R Station

An archaeological survey of this station identified no sites that were eligible for the NRHP, and no further archaeological work was recommended. An architectural assessment that included this station and associated workspace was conducted for a prior FERC project (FERC Docket No. CP08-420-000). This prior study identified one historic property within the APE, and the Connecticut SHPO concurred at that time that there would be no effect on historic properties. No further studies are recommended. Comments from the Connecticut SHPO on these recommendations are pending.

#### Middletown M&R Station

The survey for historic architectural properties identified one resource within the APE; however, this resource was not recommended eligible for the NRHP. No further studies were recommended. The Connecticut SHPO agreed with the recommendation in a letter dated April 8, 2014.

#### Salem Pike M&R Station

The survey for historic architectural properties identified three resources within the APE. None of these resources were recommended eligible for the NRHP, and no further studies were recommended. The Connecticut SHPO agreed with the recommendations in a letter dated April 8, 2014.

#### Willimantic M&R Station

An archaeological survey of this station identified no sites that are eligible for the NRHP. The survey for historic architectural properties identified three resources within the APE. None of these resources were recommended eligible for the NRHP, and no further work was recommended. The Connecticut SHPO responded that one resource, CT-65, may be eligible for the NRHP, but concluded that no historic properties would be affected in a letter dated April 8, 2014.

#### Pomfret M&R Station

The survey for historic architectural properties identified one resource within the APE; however, this resource was not recommended eligible for the NRHP. No further work was recommended. The Connecticut SHPO responded that this resource, CT-47, may be eligible for the NRHP, but concluded that no historic properties would be affected in a letter dated April 8, 2014.

#### Putnam M&R Station

The survey for historic architectural properties identified seven resources within the APE. None of these resources were recommended eligible for the NRHP, and no further studies were recommended. The Connecticut SHPO responded that three resources (CT-48, CT-52, and CT-53) may be eligible for the NRHP, but concluded that no historic properties would be affected in a letter dated April 8, 2014.

#### **4.10.2.3 Rhode Island**

Algonquin conducted an archaeological survey of the Burrillville Compressor Station and identified two archaeological sites, both pre-contact sites of unknown temporal affiliation. One of the sites, the Algonquin Lane Site (RI 2568), may be eligible for the NRHP and requires evaluation of its eligibility; the second site was not recommended eligible for the NRHP. The Rhode Island SHPO agreed with this recommendation in a letter dated March 5, 2014. Site RI 2568 was evaluated in May 2014, and was recommended as not eligible for the NRHP. The report for this evaluation was submitted to the Rhode Island SHPO on December 18, 2014, and comments from the Rhode Island SHPO are pending. The survey for historic architectural properties identified two resources within the APE. Neither of these resources was recommended eligible for the NRHP. The Rhode Island SHPO agreed with this recommendation in a letter dated April 1, 2014.

#### **4.10.2.4 Massachusetts**

##### **Pipeline Facilities**

Many portions of the West Roxbury Lateral have low potential for containing significant archaeological sites due to prior disturbance. However, Algonquin has identified the West Roxbury M&R Station as a location that required archaeological investigations.

The survey for architectural properties identified 259 resources within the APE of the West Roxbury Lateral. Only two of these resources are considered eligible for listing on the NRHP: St. Theresa of Avila Church Complex in West Roxbury and the Willow Street Area in Dedham. The Project would have no effect on these historic resources.

## **Aboveground Facilities**

The Project would involve work at 10 M&R stations, including: Assonet M&R Station, West Roxbury M&R Station, North Fall River M&R Station, New Bedford M&R Station, Middleborough M&R Station, Brockton M&R Station, Norwood M&R Station, Needham M&R Station, Wellesley M&R Station, and Mystic M&R Station. Based on research on previously recorded sites and a walk-over reconnaissance of these stations, all except the West Roxbury M&R Station have little potential for the presence of significant archaeological sites and do not require additional studies. The Massachusetts SHPO agreed with the recommendations in a letter dated March 10, 2014. All facilities also were surveyed for historic architectural properties with the Project's APE. The other aboveground facilities in Massachusetts (MLVs and launcher/receivers) would be modified or constructed within the proposed pipeline right-of-way and are therefore included in the discussion of pipeline facilities. A summary of the findings at each facility is presented below.

### West Roxbury M&R Station

An archaeological survey of this station identified no sites that are eligible for the NRHP. Review of this recommendation by the Massachusetts SHPO is pending. The survey for historic architectural properties identified 14 resources within the APE, five of which also were within the APE for the West Roxbury Lateral. None of these resources were recommended eligible for the NRHP.

### North Fall River M&R Station

The survey for historic architectural properties identified one resource within the APE; however, this resource was not recommended eligible for the NRHP, and no further work was recommended.

### Brockton M&R Station

The survey for historic architectural properties identified one resource within the APE; however, this resource was not recommended eligible for the NRHP, and no further work was recommended.

### Norwood M&R Station

The survey for historic architectural properties identified three resources within the APE. None of these resources were recommended eligible for the NRHP, and no further work was recommended.

### Mystic M&R Station

The survey for historic architectural properties identified three resources within the APE. None of these resources were recommended eligible for the NRHP, and no further work was recommended.

## **4.10.3 Outstanding Cultural Resource Investigations**

Algonquin has yet to file some identification reports, evaluation reports, and SHPO comments for portions of the Project. A summary of this outstanding work is presented below (see also table 4.10.2-1).

#### **4.10.3.1 New York**

Identification survey for archaeological sites remains for a portion of the Haverstraw to Stony Point Take-up and Relay as well as the Stony Point to Yorktown Take-up and Relay segments. Additionally, evaluation work is pending for two sites along the Haverstraw to Stony Point Take-up and Relay segment (Corral and Depressions Site and the Pound Swamp Site) and for seven sites on the Stony Point to Yorktown Take-up and Relay segment (Franck Road Site, St. John the Divine Fresh Air Home, Westchester Wetlands Site, Pleasantside Site, Little Stream Site, Furnace Brook Site, and Kiln Site).

#### **4.10.3.2 Connecticut**

Identification survey is not complete for a portion of the E-1 System Lateral Take-up and Relay. Evaluation work also is pending for 17 sites on the E-1 System Lateral Take-up and Relay (Elisha Brook Pre-Contact Site; Johnnycake Brook Site; Meetinghouse Hill Site; Susquetonscut Brook Mill Site; Susquetonscut Brook Post-Contact Site; Susquetonscut Brook Pre-Contact sites 1 through 9, 11, and 12; and the Pullback Site), and the Raymond Hill Wetland Site on the E-1 System Lateral Loop Extension.

#### **4.10.3.3 Rhode Island**

Evaluation studies for one site located at the Burrillville Compressor Station, the Algonquin Lane Site, has been completed, but comments from the Rhode Island SHPO are pending.

#### **4.10.3.4 Massachusetts**

Comments from the Massachusetts SHPO are pending for additional studies conducted for portions of the West Roxbury Lateral and the West Roxbury M&R Station.

#### **4.10.4 Unanticipated Discoveries Procedures**

Algonquin has prepared procedures to be used in the event any unanticipated historic properties or human remains are encountered during construction. The Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains provide for the notification of interested parties, including Indian tribes, in the event of any discovery. The Connecticut, Massachusetts, New York, and Rhode Island SHPOs agreed with the procedure's provisions and we find them acceptable as well.

#### **4.10.5 General Impact and Mitigation**

Construction and operation of the Project could affect historic properties. Direct effects could include destruction or damage to all, or a portion of, an archaeological site, or alteration or removal of a historic property. Indirect effects could include the introduction of visual, atmospheric, or audible elements that affect the setting or character of a historic property.

Compliance with section 106 of the NHPA has not been completed for the Project. Cultural resources surveys of portions of the Project and consultation with the SHPOs and other parties has not been completed. To date, nine archaeological sites located in New York, 17 sites in Connecticut, and one site in Rhode Island require additional testing to determine eligibility for listing on the NRHP. If FERC, in consultation with the New York, Connecticut, and Rhode Island SHPOs, determines that the sites are eligible and cannot be avoided, Algonquin would be required to prepare a treatment plan, in consultation with the appropriate parties, to mitigate adverse effects. The FERC would afford the ACHP an opportunity to comment in accordance with 36 CFR 800.6. Implementation of a treatment plan would occur only after Certification of the Project and receipt of written notification to proceed from the FERC.



To ensure that the FERC's responsibilities under the NHPA and its implementing regulations are met, **we recommend that:**

- **Algonquin should not begin implementation of any treatment plans/measures (including archaeological data recovery); construction of facilities; or use of staging, storage, or temporary work areas and new or to-be-improved access roads until:**
  - a. **Algonquin files with the Secretary all remaining cultural resources survey and evaluation reports, any necessary treatment plans, and the New York, Connecticut, Rhode Island, and Massachusetts SHPOs' comments on the reports and plans;**
  - b. **the ACHP is provided an opportunity to comment on the undertaking if historic properties would be adversely affected; and**
  - c. **the FERC staff reviews and the Director of OEP approves all cultural resources survey reports and plans, and notifies Algonquin in writing that treatment plans/mitigation measures may be implemented or construction may proceed.**

**All material filed with the Secretary containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."**

#### **4.11 AIR QUALITY AND NOISE**

##### **4.11.1 Air Quality**

Air quality would be affected by construction and operation of the AIM Project. Although air emissions would be generated by construction activities involving the proposed pipeline and aboveground facilities, the majority of air emissions associated with the Project would result from operation of the new compressor units at five of the existing compressor stations. These would be the Stony Point and Southeast Compressor Stations in New York; the Cromwell and Chaplin Compressor Stations in Connecticut; and the Burrillville Compressor Station in Rhode Island. The modifications at the sixth compressor station, the Oxford Compressor Station in Connecticut, would involve the restaging of one existing compressor unit. This work would not result in impacts on air quality or noise. Therefore, the Oxford Compressor Station is not included in the analysis below. Three new M&R stations are also proposed to be added as part of the Project, including one in Connecticut and two in Massachusetts. The new M&R stations would include natural gas-fired heaters, which would be new sources of emissions during operation of the proposed Project.

##### **4.11.1.1 Existing Air Quality**

The Project area in southeastern New York and southwestern Connecticut has a climate that is characterized as continental. Winters are short and moderately cold lasting into mid-March. Summers are warm with periods of oppressive heat and humidity, while autumn is characterized by mild temperatures extending into November. Normal monthly precipitation, as recorded at the nearest measurement stations (Suffern, New York; Carmel, New York; and Danbury, Connecticut), ranges from a high of 5 inches during the month of July to a low of approximately 3 inches during the month of February. Airflow and weather systems that affect the area are primarily of continental origin.

The Project area in central and western Connecticut has a climate that is characterized as continental with hot summers and cold winters. Normal monthly precipitation, as recorded at the nearest

measurement stations (Middletown and Thompson, Connecticut), ranges from a high of 5 inches during the month of October to a low of approximately 3 inches during the month of February. The primary airflow and weather systems that affect the area are either cold, dry air originating from sub-arctic North America or warm, moist air moving across the mid-continent from the Gulf of Mexico and sub-tropical waters of the Atlantic.

The Project area in Rhode Island has a climate that is characterized as humid continental. In general the winters are cold, but extreme temperatures are of short duration. The summers are comparatively cool, although there are some periods of hot weather, usually of short duration. Normal monthly precipitation, as recorded at the nearest measurement station (Foster, Rhode Island), ranges from a high of 5 inches during the month of March to a low of approximately 4 inches during the month of July. Winds are predominantly from the west and seasonal temperature differentiation is moderated by the proximity of Narragansett Bay and the Atlantic Ocean.

The Project area in eastern and southeastern Massachusetts has a climate that is characterized as humid continental. The climate in the region is characterized by frequent changes in the weather, large ranges in temperature, and considerable diversity from place to place. Normal monthly precipitation, as recorded at the nearest measurement station (New Bedford and Milton, Massachusetts), ranges from a high of 5 inches during the month of March to a low of approximately 4 inches during the month of May. The primary airflow and weather systems that affect the area are either cold, dry air originating from sub-arctic North America or warm, moist air moving across the mid-continent from the Gulf of Mexico and sub-tropical waters of the Atlantic, or cold air from the North Atlantic. Occasionally, cool, damp air from the North Atlantic results in Northeasters.

Ambient air quality is protected by federal and state air quality standards. The EPA established NAAQS for seven “criteria air pollutants”, including nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), ozone, sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM<sub>2.5</sub>), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM<sub>10</sub>), and lead.

There are two classifications of NAAQS, primary and secondary standards. EPA set limits under the primary standards to protect human health including sensitive populations such as children, the elderly, and asthmatics. EPA set secondary standard limits to protect public welfare from detriments such as reduced visibility and damage to crops, vegetation, animals, and buildings. The federal NAAQS are presented in table 4.11.1-1. The NYSDEC, CTDEEP, and MADEP all have adopted ambient air quality standards (AAQS) that differ in some respects from the current NAAQS. Table 4.11.1-2 summarizes the current AAQSs for New York, Connecticut, and Massachusetts (NYSDEC, 2014h; CTDEEP, 2014d; MADEP, 2014a). The RIDEM has adopted in full all of the NAAQS.

GHGs occur in the atmosphere both naturally and as a result of human activities, such as the burning of fossil fuels. These gases are the integral components of the atmosphere’s greenhouse effect that warms the earth’s surface and moderates day/night temperature variation. In general, the most abundant GHGs are water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone. On December 7, 2009, the EPA defined air pollution to include the mix of six long-lived and directly emitted GHGs, finding that the presence of the following GHGs in the atmosphere may endanger public health and welfare through climate change: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Rhode Island has also developed ambient air toxic guidelines, including a standard for benzene, to which the Project would also be subject (RIDEM, 2014).

TABLE 4.11.1-1			
National Ambient Air Quality Standards			
Pollutant	Averaging Period	Standards	
		Primary	Secondary
SO <sub>2</sub>	1-hour <sup>j,k</sup>	75 ppb	--
	3-hour <sup>b</sup>	--	0.5 ppm 1300 µg/m <sup>3</sup>
	Annual <sup>a,k</sup>	0.03 ppm 80 µg/m <sup>3</sup>	--
	24-hour <sup>b,k</sup>	0.14 ppm 365 µg/m <sup>3</sup>	--
PM <sub>10</sub>	24-hour <sup>d</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
PM <sub>2.5</sub> (2012 Standard)	Annual <sup>e,l</sup>	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>
PM <sub>2.5</sub> (2006 Standard)	24-hour <sup>f</sup>	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
PM <sub>2.5</sub> (1997 Standard)	Annual <sup>e,l</sup>	15.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>
	24-hour <sup>f</sup>	65 µg/m <sup>3</sup>	65 µg/m <sup>3</sup>
NO <sub>2</sub>	Annual <sup>a</sup>	0.053 ppm (53 ppb) 100 µg/m <sup>3</sup>	0.053 ppm (53 ppb) 100 µg/m <sup>3</sup>
	1-hour <sup>c</sup>	100 ppb 188 µg/m <sup>3</sup>	--
CO	8-hour <sup>b</sup>	9 ppm 10,000 µg/m <sup>3</sup>	--
	1-hour <sup>b</sup>	35 ppm 40,000 µg/m <sup>3</sup>	--
Ozone (2008 Standard)	8-hour <sup>g,h,i</sup>	0.075 ppm	0.075 ppm
Ozone (1997 Standard)	8-hour <sup>g,i</sup>	0.08 ppm	0.08 ppm
Lead (Pb)	Rolling 3-month <sup>a</sup>	0.15 µg/m <sup>3</sup>	0.15 µg/m <sup>3</sup>
<sup>a</sup> Not to be exceeded. <sup>b</sup> Not to be exceeded more than once per year. <sup>c</sup> Compliance based on 3-year average of the 98 <sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within an area. <sup>d</sup> Not to be exceeded more than once per year on average over 3 years. <sup>e</sup> Compliance based on 3-year average of weighted annual mean PM <sub>2.5</sub> concentrations at community-oriented monitors. <sup>f</sup> Compliance based on 3-year average of 98 <sup>th</sup> percentile of 24-hour concentrations at each population-oriented monitor within an area. <sup>g</sup> Compliance based on 3-year average of fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area. <sup>h</sup> The EPA is currently reconsidering the 8-hour ozone standard set in March 2008. However, the EPA has moved forward with implementing the 2008 standard until the reconsideration is finalized. <sup>i</sup> The EPA proposed to revoke the 1997 8-hour ozone NAAQS in June 2013; until this action appears in the Federal Register as a final rule, the Project is still subject to requirements related to its maintenance status under the 1997 8-hour ozone NAAQS. <sup>j</sup> Compliance based on 3-year average of 99 <sup>th</sup> percentile of the daily maximum 1-hour average at each monitor within an area. <sup>k</sup> The 24-hour and annual average primary standards for SO <sub>2</sub> remain in effect until one year after an area is designated for the 1-hour standard. Area designations in Ohio were finalized for the 1-hour standard on October 4, 2013. <sup>l</sup> The 1997 annual PM <sub>2.5</sub> standard and associated implementation rules remain in effect until 1 year after an area is designated for the 2013 annual PM <sub>2.5</sub> standard. Area designations have not yet been proposed for the 2013 standard.			
Notes: ppm = parts per million by volume; ppb = parts per billion by volume; µg/m <sup>3</sup> = micrograms per cubic meter			

TABLE 4.11.1-2						
State Ambient Air Quality Standards						
Pollutant	Averaging Period	New York AAQS	Primary Connecticut AAQS	Secondary Connecticut AAQS	Primary Massachusetts AAQS	Secondary Massachusetts AAQS
SO <sub>2</sub>	Annual <sup>a,d</sup>	0.03 ppm (80 µg/m <sup>3</sup> )	0.03 ppm (80 µg/m <sup>3</sup> )	--	0.03 ppm (80 µg/m <sup>3</sup> )	--
	24-hour <sup>b</sup>	0.14 ppm (365 µg/m <sup>3</sup> )	0.14 ppm (365 µg/m <sup>3</sup> )	0.1 ppm (260 µg/m <sup>3</sup> )	0.14 ppm (365 µg/m <sup>3</sup> )	--
	24-hour <sup>c</sup>	0.10 ppm	--	--	--	--
	3-hour <sup>b</sup>	0.50 ppm (1,300 µg/m <sup>3</sup> )	--	0.50 ppm (1,300 µg/m <sup>3</sup> )	--	0.50 ppm (1,300 µg/m <sup>3</sup> )
	3-hour <sup>c</sup>	0.25 ppm	--	--	--	--
Suspended Particulates	Annual <sup>a</sup>	45 µg/m <sup>3</sup> (Level 1 areas) 55 µg/m <sup>3</sup> (Level 2 areas) 65 µg/m <sup>3</sup> (Level 3 areas) 75 µg/m <sup>3</sup> (Level 4 areas)	--	--	--	--
	24-hour <sup>b</sup>	250 µg/m <sup>3</sup>	--	--	--	--
PM <sub>10</sub>	Annual <sup>h</sup>	--	50 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>
	24-hour <sup>i</sup>	--	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
NO <sub>2</sub>	Annual <sup>a</sup>	0.05 ppm (100 µg/m <sup>3</sup> )	0.05 ppm (100 µg/m <sup>3</sup> )	0.05 ppm (100 µg/m <sup>3</sup> )	0.05 ppm (100 µg/m <sup>3</sup> )	0.05 ppm (100 µg/m <sup>3</sup> )
CO	8-hour <sup>b</sup>	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )
	1-hour <sup>b</sup>	35 ppm (40 µg/m <sup>3</sup> )	35 ppm (40 µg/m <sup>3</sup> )	35 ppm (40 µg/m <sup>3</sup> )	35 ppm (40 µg/m <sup>3</sup> )	35 ppm (40 µg/m <sup>3</sup> )
Ozone	8-hour <sup>j</sup>	--	0.08 ppm	0.08 ppm	--	--
	1-hour <sup>i</sup>	--	0.012 ppm	0.012 ppm	0.012 ppm (235 µg/m <sup>3</sup> )	0.012 ppm (235 µg/m <sup>3</sup> )
Photochemical Oxidants	1-hour <sup>b</sup>	0.08 ppm (160 µg/m <sup>3</sup> )	--	--	--	--
Non-methane hydrocarbons	3-hour <sup>b,e</sup>	0.24 ppm (160 µg/m <sup>3</sup> )	0.24 ppm (160 µg/m <sup>3</sup> )	0.24 ppm (160 µg/m <sup>3</sup> )	--	--
Total Fluorides	Growing season <sup>f,g</sup>	40 ppm	--	--	--	--
	60 days <sup>f</sup>	60 ppm	--	--	--	--
	30 days <sup>f</sup>	80 ppm	--	--	--	--
Gaseous Fluorides	1 month <sup>f</sup>	1.0 ppb (0.8 µg/m <sup>3</sup> )	--	--	--	--
	1 week <sup>f</sup>	2.0 ppb (1.65 µg/m <sup>3</sup> )	--	--	--	--
	24-hour <sup>f</sup>	3.5 ppb (2.85 µg/m <sup>3</sup> )	--	--	--	--
	12-hour <sup>f</sup>	4.5 ppb (3.7 µg/m <sup>3</sup> )	--	--	--	--
Beryllium	1 month <sup>a</sup>	0.01 µg/m <sup>3</sup>	--	--	--	--

TABLE 4.11.1-2 (cont'd)						
State Ambient Air Quality Standards						
Pollutant	Averaging Period	New York AAQS	Primary Connecticut AAQS	Secondary Connecticut AAQS	Primary Massachusetts AAQS	Secondary Massachusetts AAQS
Hydrogen sulfide	1-hour <sup>a</sup>	0.01 ppm (14 µg/m <sup>3</sup> )	--	--	--	--
Lead (Pb)	3-month/ Calendar Quarter <sup>a</sup>	--	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>	1.5 µg/m <sup>3</sup>
Dioxin	Annual <sup>a</sup>		1.0 picograms/m <sup>3</sup>	--	--	--
	8-hour <sup>k</sup>		7.0 picograms/m <sup>3</sup>	--	--	--
<sup>a</sup> Not to be exceeded. <sup>b</sup> Not to be exceeded more than once per year. <sup>c</sup> Compliance based on 99 <sup>th</sup> percentile value. <sup>d</sup> Calculated as annual average of 24-hour concentrations. <sup>e</sup> Applies during 6 to 9 a.m. <sup>f</sup> Not to equal or exceed. <sup>g</sup> Growing season not to exceed 6 continuous months. <sup>h</sup> Standard attained when expected annual arithmetic mean is less than indicated value. <sup>i</sup> Standard attained when expected days per calendar year exceeding value is less than or equal to 1. <sup>j</sup> Compliance based on average of the annual fourth-highest daily maximum 8-hour average. <sup>k</sup> Surrogate value that may be used for demonstrating compliance with primary standard for dioxin.						
Notes: ppm = parts per million by volume; ppb = parts per billion by volume; µg/m <sup>3</sup> = micrograms per cubic meter; mg/m <sup>3</sup> = milligrams per cubic meter.						

As with any fossil fuel-fired project or activity, the Project would contribute GHG emissions. The primary GHGs that would be produced by the Project include CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO<sub>2</sub>e). The CO<sub>2</sub>e takes into account the global warming potential (GWP) of each GHG. The GWP is a ratio relative to CO<sub>2</sub> of a particular GHG's ability to absorb solar radiation as well its residence time within the atmosphere (Intergovernmental Panel on Climate Change, 2007). Thus, CO<sub>2</sub> has a GWP of 1, CH<sub>4</sub> has a GWP of 25, and N<sub>2</sub>O has a GWP of 298.<sup>9</sup> To obtain the CO<sub>2</sub>e quantity, the mass of the particular GHG is multiplied by the corresponding GWP. The CO<sub>2</sub>e value for each of the GHG compounds is summed to obtain the total CO<sub>2</sub>e GHG emissions. We received comments on the amount and impacts of GHG emission the Project would contribute. In compliance with EPA's definition of air pollution to include GHGs, we have provided estimates of GHG emissions for construction and operation, as discussed throughout this section. Impacts from GHG emissions (i.e., climate change) are discussed in more detail in section 4.11.1.3.

Air quality control regions (AQCR) are areas established by EPA and local agencies, in accordance with section 107 of the CAA, for air quality planning purposes in which SIPs describe how NAAQS would be achieved and maintained. The AQCRs are intra- and interstate regions such as large metropolitan areas where improvement of the air quality in one portion of the AQCR requires emission

<sup>9</sup> These GWPs are based on a 100-year time period. We have selected their use over other published GWPs for other timeframes because these are the GWPs EPA has established for reporting of GHG emissions and air permitting requirements. This allows for a consistent comparison with these regulatory requirements.

reductions throughout the AQCR. Each AQCR, or portion thereof, is designated based on compliance with the NAAQS. Areas are designated attainment, unclassifiable, nonattainment, or maintenance on a pollutant-by-pollutant basis. Attainment areas are in compliance (below) with the NAAQS and nonattainment areas not in compliance (exceed) with the NAAQS. Areas where no data are available are designated unclassifiable. Areas that have been designated nonattainment but have since demonstrated compliance with the NAAQS are designated as “maintenance” for that pollutant. Maintenance areas may be subject to more stringent regulatory requirements to ensure continued attainment of the NAAQS pollutant.

The entire Project area is designated attainment or unclassifiable for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and lead. Table 4.11.1-3 identifies the counties designated as nonattainment and/or maintenance within the Project area for CO, ozone, and PM<sub>2.5</sub> (EPA, 2014a).

All Project facilities are also within the Northeast Ozone Transport Region. The Ozone Transport Region (42 USC §7511c) includes 11 northeastern states in which ozone transports from one or more states and contributes to a violation of the ozone NAAQS in one or more other states. States in this region are required to submit a SIP, stationary sources are subject to more stringent permitting requirements, and various regulatory thresholds are lower for the pollutants that form ozone, even if they meet the ozone NAAQS.

The EPA and state and local agencies have established a network of ambient air quality monitoring stations to measure and track the background concentrations of criteria pollutants across the United States. This data is then used by regulatory agencies to compare the air quality of an area to the NAAQS. To characterize the background air quality in the region surrounding the Project areas, data were obtained from representative air quality monitoring stations. A summary of monitoring data from the EPA AirData database for the 3-year period of 2010 through 2012 is provided in table 4.11.1-4 (EPA, 2014b).

#### **4.11.1.2 Air Quality Regulatory Requirements**

##### **Federal Air Quality Regulations**

Air quality in the United States is regulated by federal statutes in the CAA and its amendments. The provisions of the CAA that are applicable to the AIM Project are discussed below.

##### Prevention of Significant Deterioration and Nonattainment New Source Review

Ambient air quality within the Project area is protected by the EPA’s Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) programs. The PSD regulations apply to new major stationary sources or major modifications to existing stationary sources located in attainment areas. The NNSR regulations apply to new or modified stationary sources located in nonattainment areas.

The PSD regulations (40 CFR 52.21) define a major source as any source listed under the named industrial source categories in the regulation that has the potential-to-emit (PTE) 100 tons per year (tpy) or more of any New Source Review (NSR) pollutant or any source not on the list of named categories that has a PTE of any NSR pollutant equal to or greater than 250 tpy. The Project would not include facilities or operations included on the list of named source categories to which the 100-tpy trigger applies.

TABLE 4.11.1-3

**Nonattainment and Maintenance Areas Within the Vicinity of the AIM Project**

Project Component	Nonattainment/ Maintenance Pollutant	County	Air Quality Control Region	General Conformity Applicability Threshold (tons/year)
<b>New York</b>				
Pipeline – 6.8 miles Stony Point M&R Station Stony Point Compressor Station	PM <sub>2.5</sub> Maintenance	Rockland, NY	NY-NNJ-LI, NY-NJ-CT	PM <sub>2.5</sub> – 100 SO <sub>2</sub> – 100 NO <sub>x</sub> – 100
	1997 Ozone – Moderate NA	Rockland, NY	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	Rockland, NY	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
Pipeline – 8.8 miles Hudson River HDD Peekskill and Cortlandt M&R Stations	PM <sub>2.5</sub> Maintenance	Westchester, NY	NY-NNJ-LI, NY-NJ-CT	PM <sub>2.5</sub> – 100 SO <sub>2</sub> – 100 NO <sub>x</sub> – 100
	1997 Ozone – Moderate NA	Westchester, NY	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	Westchester, NY	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Westchester, NY	NY-NNJ-LI, NY-NJ-CT	CO – 100
Pipeline – 0.1 mile Southeast Compressor Station Purge and Blowdown of Pipeline and Compressor Station	1997 Ozone – Moderate NA	Putnam, NY	Poughkeepsie, NY	NO <sub>x</sub> – 100 VOC – 50
<b>Connecticut</b>				
Pipeline – 4.4 miles Still River HDD West Danbury M&R Station Pipeline – 1.8 miles	PM <sub>2.5</sub> Maintenance	Fairfield, CT	NY-NNJ-LI, NY-NJ-CT	PM <sub>2.5</sub> – 100 SO <sub>2</sub> – 100 NO <sub>x</sub> – 100
	1997 Ozone – Moderate NA	Fairfield, CT	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	Fairfield, CT	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Fairfield, CT	NY-NNJ-LI, NY-NJ-CT	CO – 100
Cromwell Compressor Station Middletown M&R Station	1997 Ozone – Moderate NA	Middlesex, CT	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	Middlesex, CT	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Middlesex, CT	Hartford-New Britain- Middletown, CT	CO – 100
	PM <sub>2.5</sub> Maintenance	New Haven, CT	NY-NNJ-LI, NY-NJ-CT	PM <sub>2.5</sub> – 100 SO <sub>2</sub> – 100 NO <sub>x</sub> – 100
Southbury, North Haven, Waterbury, and Guilford M&R Stations	1997 Ozone – Moderate NA	New Haven, CT	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	New Haven, CT	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	New Haven, CT	New Haven-Meriden- Waterbury, CT	CO – 100
	1997 Ozone – Moderate NA	New London, CT	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
Pipeline – 10.4 miles Greenville, Salem Pike, Montville, and Oakland Heights M&R Stations	2008 Ozone – Marginal NA	New London, CT	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
	1997 Ozone – Moderate NA	Hartford, CT	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
Pipeline – 0.2 mile Farmington and Glastonbury M&R Stations	2008 Ozone – Marginal NA	Hartford, CT	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Hartford, CT	Hartford-New Britain- Middletown, CT	CO – 100

TABLE 4.11.1-3 (cont'd)

**Nonattainment and Maintenance Areas Within the Vicinity of the AIM Project**













Project Component	Nonattainment/ Maintenance Pollutant	County	Air Quality Control Region	General Conformity Applicability Threshold (tons/year)
Chaplin Compressor Station Willimantic, Pomfret, and Putnam M&R Stations	1997 Ozone – Moderate NA	Windham, CT	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	Windham, CT	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
	1997 Ozone – Moderate NA	AQCR 042 Hartford-New Haven-Springfield Interstate	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	AQCR 042 Hartford-New Haven-Springfield Interstate	Greater Connecticut	NO <sub>x</sub> – 100 VOC – 50
<b>Rhode Island</b>				
Burrillville Compressor Station Purge and Blowdown of Compressor Station	1997 Ozone – Moderate NA	Providence, RI	Providence (all of RI), RI	NO <sub>x</sub> – 100 VOC – 50
<b>Massachusetts</b>				
Pipeline – 5.1 miles	1997 Ozone – Moderate NA	Norfolk and Suffolk, MA	Boston-Lawrence- Worcester (Eastern MA), MA	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Norfolk and Suffolk, MA	Boston, MA	CO – 100
Mystic, West Roxbury, Needham, Wellesley, and Norwood M&R Stations	1997 Ozone – Moderate NA	Norfolk, Suffolk, and Middlesex, MA	Boston-Lawrence- Worcester (Eastern MA), MA	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Norfolk, Suffolk, and Middlesex, MA	Boston, MA	CO – 100
New Bedford, Brockton, North Middleborough, North Fall River, and Assonet M&R Stations Gas Heaters at West Roxbury M&R Station	1997 Ozone – Moderate NA	Bristol and Plymouth, MA	Boston-Lawrence- Worcester (Eastern MA), MA	NO <sub>x</sub> – 100 VOC – 50
	1997 Ozone – Moderate NA	Suffolk, MA	Boston-Lawrence- Worcester (Eastern MA), MA	NO <sub>x</sub> – 100 VOC – 50
	CO – Maintenance	Suffolk, MA	Boston, MA	CO – 100
Purge and Blowdown of Pipeline and M&R Stations	1997 Ozone – Moderate NA	AQCR 119 Metropolitan Boston Intrastate	Boston-Lawrence- Worcester (Eastern MA), MA	NO <sub>x</sub> – 100 VOC – 50
<b>Multi-State Region</b>				
Purge and Blowdown of Pipeline, Compressor Stations and M&R Stations	PM <sub>2.5</sub> Maintenance	AQCR 043 NJ- NY-CT Interstate	NY-NNJ-LI, NY-NJ-CT	PM <sub>2.5</sub> – 100 SO <sub>2</sub> – 100 NO <sub>x</sub> – 100
	1997 Ozone – Moderate NA	AQCR 043 NJ- NY-CT Interstate	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
	2008 Ozone – Marginal NA	AQCR 043 NJ- NY-CT Interstate	NY-NNJ-LI, NY-NJ-CT	NO <sub>x</sub> – 100 VOC – 50
Notes: NY = New York; NJ = New Jersey; CT = Connecticut; RI = Rhode Island; MA = Massachusetts; NA: nonattainment; NY-NNJ-LI = New York-North New Jersey-Long Island Key:				
 NY-NNJ-LI, NY-NJ-CT, PM <sub>2.5</sub> Maintenance  NY-NNJ-LI, NY-NJ-CT, 1997 Ozone – Moderate NA  NY-NNJ-LI, NY-NJ-CT, 2008 Ozone – Marginal NA  NY-NNJ-LI, NY-NJ-CT, CO – Maintenance				
 Poughkeepsie, NY, 1997 Ozone – Moderate NA  Hartford-New Britain-Middletown, CT, CO – Maintenance  New Haven-Meriden-Waterbury, CT, CO – Maintenance  Greater Connecticut, 1997 Ozone – Moderate NA				
 Greater Connecticut, 2008 Ozone – Marginal NA  Providence (all of RI), RI, 1997 Ozone – Moderate NA  Boston-Lawrence-Worcester (Eastern MA), MA, 1997 Ozone – Moderate NA  Boston, MA, CO – Maintenance				



TABLE 4.11.1-4					
Ambient Air Quality Concentrations					
Pollutant	Averaging Period	Monitoring Station Location	2010	2011	2012
<b>Stony Point Compressor Station</b>					
CO	1-hour <sup>a</sup>	Fairfield, CT	1.5 ppm	1.4 ppm	0.9 ppm
	8-hour <sup>a</sup>	Fairfield, CT	1.0 ppm	1.0 ppm	0.8 ppm
NO <sub>2</sub>	1-hour <sup>b</sup>	Lackawanna, PA	43 ppb	45 ppb	36 ppb
PM <sub>2.5</sub>	24-hour <sup>b</sup>	Orange, NY	27 µg/m <sup>3</sup>	21 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
	Annual <sup>c</sup>	Orange, NY	8.1 µg/m <sup>3</sup>	8.6 µg/m <sup>3</sup>	7.8 µg/m <sup>3</sup>
PM <sub>10</sub>	24-hour <sup>a</sup>	New Haven, CT	34 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	37 µg/m <sup>3</sup>
SO <sub>2</sub>	1-hour <sup>d</sup>	Putnam, NY	10 ppb	11 ppb	6 ppb
	24-hour <sup>a</sup>	Putnam, NY	4 ppb	5 ppb	3 ppb
Ozone	1-hour <sup>a</sup>	Rockland, NY	0.101 ppm	0.086 ppm	0.100 ppm
	8-hour <sup>e</sup>	Rockland, NY	0.076 ppm	0.074 ppm	0.079 ppm
<b>Southeast Compressor Station</b>					
CO	1-hour <sup>a</sup>	Fairfield, CT	1.5 ppm	1.4 ppm	0.9 ppm
	8-hour <sup>a</sup>	Fairfield, CT	1.0 ppm	1.0 ppm	0.8 ppm
NO <sub>2</sub>	1-hour <sup>b</sup>	Lackawanna, PA	43 ppb	45 ppb	36 ppb
PM <sub>2.5</sub>	24-hour <sup>b</sup>	Fairfield, CT	26 µg/m <sup>3</sup>	25 µg/m <sup>3</sup>	22 µg/m <sup>3</sup>
	Annual <sup>c</sup>	Fairfield, CT	9.1 µg/m <sup>3</sup>	9.6 µg/m <sup>3</sup>	8.4 µg/m <sup>3</sup>
PM <sub>10</sub>	24-hour <sup>a</sup>	New Haven, CT	34 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	37 µg/m <sup>3</sup>
SO <sub>2</sub>	1-hour <sup>d</sup>	Putnam, NY	10 ppb	11 ppb	6 ppb
	24-hour <sup>a</sup>	Putnam, NY	4 ppb	5 ppb	3 ppb
Ozone	1-hour <sup>a</sup>	Fairfield, CT	0.109 ppm	0.102 ppm	0.107 ppm
	8-hour <sup>e</sup>	Fairfield, CT	0.084 ppm	0.083 ppm	0.084 ppm
<b>Cromwell Compressor Station</b>					
CO	1-hour <sup>a</sup>	Hartford, CT	1.4 ppm	2.0 ppm	1.3 ppm
	8-hour <sup>a</sup>	Hartford, CT	1.2 ppm	1.3 ppm	1.0 ppm
NO <sub>2</sub>	1-hour <sup>b</sup>	Hartford, CT	44 ppb	58 ppb	37 ppb
PM <sub>2.5</sub>	24-hour <sup>b</sup>	Hartford, CT	24 µg/m <sup>3</sup>	23 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
	Annual <sup>c</sup>	Hartford, CT	8.5 µg/m <sup>3</sup>	9.3 µg/m <sup>3</sup>	8.5 µg/m <sup>3</sup>
PM <sub>10</sub>	24-hour <sup>a</sup>	Hartford, CT	24 µg/m <sup>3</sup>	24 µg/m <sup>3</sup>	22 µg/m <sup>3</sup>
SO <sub>2</sub>	1-hour <sup>d</sup>	Hartford, CT	10 ppb	14 ppb	8 ppb
	24-hour <sup>a</sup>	Hartford, CT	6 ppb	8 ppb	4 ppb
Ozone	1-hour <sup>a</sup>	Middlesex, CT	0.100 ppm	0.114 ppm	0.103 ppm
	8-hour <sup>e</sup>	Middlesex, CT	0.081 ppm	0.080 ppm	0.081 ppm

TABLE 4.11.1-4 (cont'd)					
Ambient Air Quality Concentrations					
Pollutant	Averaging Period	Monitoring Station Location	2010	2011	2012
<b>Chaplin Compressor Station</b>					
CO	1-hour <sup>a</sup>	Hartford, CT	1.4 ppm	2.0 ppm	1.3 ppm
	8-hour <sup>a</sup>	Hartford, CT	1.2 ppm	1.3 ppm	1.0 ppm
NO <sub>2</sub>	1-hour <sup>b</sup>	Hartford, CT	44 ppb	58 ppb	37 ppb
PM <sub>2.5</sub>	24-hour <sup>b</sup>	Hartford, CT	24 µg/m <sup>3</sup>	24 µg/m <sup>3</sup>	18 µg/m <sup>3</sup>
	Annual <sup>c</sup>	Hartford, CT	7.6 µg/m <sup>3</sup>	8.9 µg/m <sup>3</sup>	7.3 µg/m <sup>3</sup>
PM <sub>10</sub>	24-hour <sup>a</sup>	Hartford, CT	24 µg/m <sup>3</sup>	24 µg/m <sup>3</sup>	22 µg/m <sup>3</sup>
SO <sub>2</sub>	1-hour <sup>d</sup>	Hartford, CT	10 ppb	14 ppb	8 ppb
	24-hour <sup>a</sup>	Hartford, CT	6 ppb	8 ppb	4 ppb
Ozone	1-hour <sup>a</sup>	Tolland, CT	0.106 ppm	0.106 ppm	0.099 ppm
	8-hour <sup>e</sup>	Tolland, CT	0.079 ppm	0.068 ppm	0.083 ppm
<b>Burrillville Compressor Station</b>					
CO	1-hour <sup>a</sup>	Providence, RI	2.3 ppm	1.8 ppm	1.5 ppm
	8-hour <sup>a</sup>	Providence, RI	1.6 ppm	1.3 ppm	1.0 ppm
NO <sub>2</sub>	1-hour <sup>b</sup>	Providence, RI	40 ppb	45 ppb	40 ppb
PM <sub>2.5</sub>	24-hour <sup>b</sup>	Kent, RI	24 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	14 µg/m <sup>3</sup>
	Annual <sup>c</sup>	Kent, RI	6.7 µg/m <sup>3</sup>	6.3 µg/m <sup>3</sup>	6.7 µg/m <sup>3</sup>
PM <sub>10</sub>	24-hour <sup>a</sup>	Kent, RI	26 µg/m <sup>3</sup>	23 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
SO <sub>2</sub>	1-hour <sup>d</sup>	Providence, RI	21 ppb	21 ppb	18 ppb
	24-hour <sup>a</sup>	Providence, RI	13 ppb	11 ppb	8 ppb
Ozone	1-hour <sup>a</sup>	Worcester, MA	0.083 ppm	0.103 ppm	0.080 ppm
	8-hour <sup>e</sup>	Worcester, MA	0.071 ppm	0.068 ppm	0.070 ppm
<sup>a</sup> 2 <sup>nd</sup> high <sup>b</sup> 98 <sup>th</sup> percentile <sup>c</sup> Mean <sup>d</sup> 99 <sup>th</sup> percentile <sup>e</sup> 4 <sup>th</sup> high					
Notes: ppm = parts per million by volume; ppb = parts per billion by volume; µg/m <sup>3</sup> = micrograms per cubic meter; mg/m <sup>3</sup> = milligrams per cubic meter.					

Major modifications to existing major sources as defined in the PSD regulations would result in a significant emissions increase and a significant net emissions increase of a regulated NSR pollutant. They would include: a modification to an existing major source that results in a net emissions increase greater than the PSD significant emission rates specified in the regulations; or an existing minor source proposing a modification that is major by itself.

NO<sub>x</sub> and VOCs are precursor pollutants to ozone; therefore, major NNSR thresholds are 25 tpy for NO<sub>x</sub> or VOC emissions, each. Similarly, SO<sub>2</sub> and NO<sub>x</sub> are PM<sub>2.5</sub> precursors and therefore the NNSR threshold for PM<sub>2.5</sub> is 100 tpy of direct PM<sub>2.5</sub>, SO<sub>2</sub>, or NO<sub>x</sub> emissions, each. Although major NNSR thresholds are established on a federal level, they may be implemented by state or local permitting authorities. As a result, the major NNSR thresholds vary by state and by location within a state.

GHGs are now a regulated NSR pollutant and under the EPA's GHG Tailoring Rule. The rule covers an estimated 70 percent of GHG emissions from stationary sources but does not apply to smaller sources such as apartment buildings and schools. Beginning on July 1, 2011, an existing industrial facility is subject to PSD review for GHGs if:

- it is already subject to PSD review for another NSR pollutant and would increase its GHG emissions by 75,000 tpy CO<sub>2</sub>e;
- the existing potential GHGs emissions are equal to or greater than 100,000 tpy CO<sub>2</sub>e and GHG emissions as a result of the Project would increase by 75,000 tpy CO<sub>2</sub>e or more; or
- the existing source is minor for PSD (including GHGs) and the modification alone would result in equal to or greater than 100,000 tpy CO<sub>2</sub>e.

The U.S. Supreme Court recently issued a ruling related to the EPA's GHG Tailoring Rule. It is not clear at this time the implication of this ruling on pending permit actions. The air permitting actions associated with the proposed Project have been presented based upon the previous interpretations of the GHG Tailoring Rule and would comply with all currently applicable federal and state rules.

We received numerous comments that the compressor stations should not be allowed to exceed permitting thresholds and obtain offsets. The emission thresholds identified above are not a limit on emissions, but are an evaluation criteria used to determine whether a specific type of permitting applies to a facility. Facilities may exceed the thresholds, which prompts further review, emission controls, and permitting requirements by the applicable air permitting authority. The CAA and air permitting program allows facilities to use air emission offsets during permitting. In order to achieve improved air quality within a nonattainment area, reductions are required throughout the entire AQCR. The commentors also misinterpret the existing compressor station emissions or offsets already obtained with the proposed changes for this Project. We are not aware of any offsets required under NNSR permitting or general conformity for any facilities associated with this Project.

Because of their attainment status, all Project facilities would potentially be subject to NNSR review for ozone precursor pollutants NO<sub>x</sub> and VOCs. Facilities located in Rockland and Westchester Counties, New York would potentially be subject to NNSR for PM<sub>2.5</sub>. Facilities located in Westchester County, New York; Fairfield, Hartford, Middlesex, and New Haven Counties, Connecticut; Norfolk, Suffolk, and Middlesex Counties, Massachusetts would potentially be subject to NNSR for CO. All other Project facilities and pollutants, including GHGs, would potentially be subject to PSD review. Each of the states in which Project facilities would be located have state-level programs that implement federal NNSR and PSD permitting, which are summarized below.

One additional factor considered in the PSD permit review process is the potential impacts on protected Class I areas. Certain lands were designated as Mandatory Federal Class I Areas as a part of the CAA Amendments of 1977. Class I Areas were designated because the air quality was considered a special feature of the area (e.g., national parks, wilderness areas, national forests). Federal Class I Areas are protected against several types of pollution including criteria pollutant concentrations, visibility degradation, and acidic deposition. If a new major source or major modification is located within 62 miles (100 kilometers) of a Class I Area, the facility is required to notify the appropriate federal officials and assess the impacts of that project on the nearby Class I Area. For major sources that are located within 6.2 miles (10 kilometers) from a Class I area, ambient air pollutant impacts must be assessed for any project emission increases. The nearest Class I areas to the AIM Project are the Lye Brook Wilderness Area in Vermont and the Brigantine Wilderness Area in New Jersey (EPA, 2014c). The shortest distance between the Lye Brook Wilderness Area and the closest portion of the Project (the Cromwell Compressor Station) is approximately 100 miles. The shortest distance between the Brigantine

Wilderness Area and the closest portion of the Project (the Stony Point Compressor Station) is approximately 119 miles. Therefore, an assessment of the impact on Class I areas is not required.

The NYSDEC administers its major NSR permitting program through 6 NYCRR 231. The New York SIP was updated in November 2010 to create a new state PSD program and to update the existing New York NNSR rules to include the 2002 federal NSR reform provisions. The Stony Point and Southeast Compressor Stations are existing major PSD sources located in New York. The facilities are also existing major NNSR sources. The proposed modifications to the Stony Point Compressor Station trigger PSD for GHG emissions and do not trigger NNSR review. An application for a significant modification to the Stony Point Compressor Station was submitted to the NYSDEC in February 2014. The proposed modifications to the Southeast Compressor Station do not trigger PSD or NNSR review.

The CTDEEP administers its NSR permitting program through Regulation of Connecticut State Agencies (RCSA) § 22a-174-3a. The Cromwell and Chaplin Compressor Stations are existing major PSD sources located in Connecticut. The facilities are also existing major NNSR sources. The proposed modifications to the Cromwell Compressor Station do not trigger NNSR review. Because Algonquin has chosen to accept a fuel use restriction, the proposed modifications also do not trigger PSD review. The proposed modifications to the Chaplin Compressor Station do not trigger PSD or NNSR review.

The RIDEM NSR permitting program is established in Air Pollution Control Regulation No. 9. The Burrillville Compressor Station is an existing major NNSR. Although the facility has existing GHG potential emissions greater than 100,000 tpy of CO<sub>2</sub>e, in Rhode Island, a major source of GHGs is not considered a major PSD source if it is not also major for another PSD pollutant. Therefore, the Burrillville Compressor Station is not considered a major source under the PSD program. The proposed modifications to the Burrillville Compressor Station do not trigger NNSR review. Also, because Algonquin has chosen to accept a fuel use restriction for the new turbine, the proposed modifications also do not trigger PSD review.

Algonquin is also proposing to modify 24 existing M&R stations, remove one existing M&R station, and install three new M&R stations; however, Algonquin has not decided on the size of some of the emission generating units at the new and/or revised M&R stations. The modifications to five existing M&R stations located in Peekskill, New York (the Peekskill M&R Station); Cortlandt, New York (the Cortlandt M&R Station); Guilford, Connecticut (the Guilford M&R Station); Windham, Connecticut (the Willimantic M&R Station); and New Bedford, Massachusetts (the New Bedford M&R Station) would include new or replacement natural gas-fired inlet gas heaters. The primary source of air emissions at the three new M&R stations proposed in Norwich, Connecticut (the Oakland Heights M&R Station); Freetown, Massachusetts (the Assonet M&R Station); and Boston, Massachusetts (the West Roxbury M&R Station) would be natural gas-fired inlet gas heaters. These gas heaters are expected to have rated maximum heat input capacities ranging from less than 1 million metric British thermal units per hour (MMBtu/hr) up to approximately 10 MMBtu/hr. Based upon the information provided by Algonquin, the potential emissions from the modified and new M&R stations would be significantly below NNSR and PSD permitting thresholds and would, therefore, not be subject to federal air permitting. Further details regarding the air permitting requirements associated with these modifications are included in the state permitting summary.

#### Title V Permitting

Title V of the CAA requires each state to develop an operating permit program. The operating permit program is implemented through Title 40 CFR Part 70, and the permits required by these regulations are often referred to as Part 70 permits. If a facility's PTE is equal to or greater than the criteria pollutant or hazardous air pollutants (HAP) thresholds, the facility is considered a "major source."

The major source threshold level is 100 tpy for criteria pollutants, 10 tpy of any single HAP, or 25 tpy of all HAPs in aggregate.

The EPA also promulgated the Title V GHG Tailoring Rule, which established permitting thresholds for GHG emissions under the Title V program. Sources with an existing Title V permit or new sources obtaining a Title V permit for non-GHG pollutants are required to address GHGs. New sources and existing sources not previously subject to Title V that have a PTE equal to or greater than 100,000 tpy CO<sub>2e</sub> would become subject to Title V requirements.

Algonquin's Stony Point and Southeast Compressor Stations in New York, Cromwell and Chaplin Compressor Stations in Connecticut, and Burrillville Compressor Station in Rhode Island have existing Title V permits, all of which are required to modify their Title V permit to incorporate the proposed modifications associated with the Project. Title V permit modifications for the Stony Point and Southeast Compressor Stations were submitted to the NYSDEC in February 2014. Air permit modifications for the Cromwell and Chaplin Compressor Stations were submitted to the CTDEEP in February and January 2014, respectively. Algonquin would be required to submit additional applications to request modifications to the existing Title V permit for these facilities once state permits have been issued. An air permit modification for the Burrillville Compressor Station was provided to the RIDEM in February 2014, which included a request to modify the existing Title V permit to incorporate the proposed modifications.

As presented in section 4.11.1.2, the individual emissions from the proposed modified or new M&R stations are unlikely to trigger federal major source permitting. Although the exact equipment has not yet been selected for the proposed modified or new M&R stations, based upon maximum potential emission estimated provided by Algonquin, it is unlikely that any of the M&R stations would trigger Title V permitting.

#### New Source Performance Standards

The New Source Performance Standards (NSPS), codified in 40 CFR 60, apply to new, modified, or reconstructed stationary sources that meet or exceed specified applicability thresholds. The NSPS are divided into several subparts. Each subpart regulates a specific source type and size. The potentially applicable subparts are addressed below.

NSPS Subpart Dc applies to steam generating units, with a maximum design heat input capacity of greater than or equal to 10 MMBtu/hr but less than or equal to 100 MMBtu/hr for which construction, modification, or reconstruction is commenced after June 9, 1989. Algonquin has not completed the final design of its heaters. Therefore, it cannot be determined if there would be any subject steam generating units with a maximum design heat input capacity of greater than or equal to 10 MMBtu/hr installed at any of the proposed Project facilities. However, if any steam generating units with a maximum design heat input capacity greater than 10 MMBtu/hr are installed as part of the Project, they would be subject to Subpart Dc requirements. There are no emissions limitations that apply to natural gas-fired steam generating units subject to Subpart Dc. Applicable units are subject to reporting requirements (for notification of initial construction and initial startup) and recordkeeping requirements (for amount of fuel combusted).

NSPS Subpart JJJJ is applicable to owners and operators of new or existing stationary spark ignition internal combustion engines that commence construction, modification, or reconstruction after June 12, 2006. The Project includes new emergency generators greater than 25 hp at each of the five affected compressor stations. Therefore, requirements of Subpart JJJJ would apply to the proposed Project. There are NO<sub>x</sub> and CO emission limits that would apply to the emergency generators and applicable units are potentially subject to fuel use, testing, monitoring, notification, reporting, and recordkeeping requirements.

NSPS Subpart KKKK applies to stationary combustion turbines with a heat input rate at peak load of 10 MMBtu/hr or greater that commenced construction, modification, or reconstruction after February 18, 2005. Subpart KKKK limits emissions of NO<sub>x</sub> as well as the sulfur content of fuel that is combusted from subject units. The AIM Project involves the installation of new stationary combustion turbines at all five affected compressor stations. Therefore, the Project would trigger the emissions limitations as well as the monitoring, reporting, recordkeeping, and testing requirements under Subpart KKKK of Part 60.

NSPS Subpart OOOO applies to storage vessels that are located in the oil and natural gas production segment, natural gas processing segment, or natural gas transmission and storage segment that commenced construction, reconstruction, or modification after August 23, 2011, and have the potential to emit VOC emissions equal to or greater than 6 tpy, as determined in accordance with Part 60.5365(e). Natural gas transmission is defined as the pipelines used for the long distance transport of natural gas (excluding processing). The Project does not include the construction, reconstruction, or modification of any storage vessels. Therefore, the requirements of Subpart OOOO do not apply.

In summary, the Project is subject to NSPS Subpart JJJJ, Subpart KKKK, and potentially Subpart Dc requirements.

#### National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAP) are codified in Title 40 CFR Parts 61 and 63 to regulate facilities that emit specific HAPs. Part 61 regulates only eight hazardous substances and specific industries: asbestos, benzene, beryllium, coke oven emissions, inorganic arsenic, mercury, radionuclides, and vinyl chlorides. The AIM Project would not emit these pollutants; therefore, the Part 61 requirements would not apply to the Project.

The 1990 CAA Amendments established a list of 189 HAPs, resulting in the promulgation of Part 63. Part 63, also known as the Maximum Achievable Control Technology standards, regulates HAP emissions specific source types located at major or area sources of HAPs. The 1990 CAA Amendments define a major source of HAPs as any source that has a PTE of 10 tpy for any single HAP or 25 tpy for all HAPs in aggregate. Area sources are stationary sources that do not exceed the thresholds for major source designation.

The existing Stony Point, Cromwell, and Burrillville Compressor Stations are major sources of HAPs, both because the facilities' HAP emissions are above the major source threshold of 10 tpy of any single HAP and 25 tpy of all HAPs in aggregate. The Cromwell and Burrillville Compressor Stations would remain major sources of HAP after the Project. Due to the abandonment of the four existing reciprocating engines, the Stony Point Compressor Station would become a minor source of HAPs following the Project; however, the NESHAPs currently applicable to this station would remain applicable following the change. The Southeast and Chaplin Compressor Station are currently not major sources for HAPs and would remain minor sources of HAPs after the Project. Below is a detailed discussion of the NESHAP regulations that are potentially applicable to the compressor stations. In addition to the source type-specific regulations, any source that is subject to a subpart of 40 CFR 63 is also subject to the general provision of NESHAP Subpart A, unless otherwise noted in the applicable subpart.

Subpart YYYY of Part 63 applies to stationary combustion turbines at major sources of HAPs. Emissions and operating limitations under Subpart YYYY apply to new and reconstructed stationary combustion turbines. Because the Stony Point, Cromwell, and Burrillville Compressor Stations are each existing major sources of HAPs with proposed new stationary combustion turbines, the Project would trigger the requirements under Subpart YYYY. However, on August 18, 2004 The D.C. Circuit Court issued a Stay of Implementation regarding this subpart. The EPA is evaluating the possibility of delisting

gas-fired turbines from the rule. Currently, natural gas-fired turbines are only subject to the general permitting and Initial Notification requirements set forth in 40 CFR Part 63, Subpart A. Thus, there are no pollutants regulated under the current Subpart YYYY.

Subpart ZZZZ of Part 63 applies to existing, new, and reconstructed stationary reciprocating internal combustion engines depending on size, use, and whether the engine is located at a major or area source of HAPs. The Project includes new emergency generators rated greater than 500 hp at the Stony Point, Southeast, Cromwell, and Chaplin Compressor Stations and a new emergency generator rated less than 500 hp at the Burrillville Compressor Station. Because the Stony Point and Cromwell Compressor Stations are existing major sources of HAPs, the new emergency generator rated greater than 500 hp must meet the Initial Notification requirements set forth in 40 CFR Part 63, Subpart A, but are not subject to any other requirement of Subpart ZZZZ.

The Burrillville Compressor Station is also an existing major source of HAPs, however, the new emergency generator rated less than 500 hp must meet the requirements of Subpart ZZZZ by meeting the NSPS Subpart JJJJ. Similarly, a new emergency generator located at an area source of HAPs, such as those proposed for the Southeast and Chaplin Compressor Stations, must also meet the requirements of Subpart ZZZZ by meeting the NSPS Subpart JJJJ. The new emergency generators proposed for these facilities are subject to NSPS Subpart JJJJ; therefore the requirements of Subpart ZZZZ would be met.

Subpart DDDDD of Part 63 applies to certain new and existing boilers and process heaters at major HAP sources and regulates CO, hydrogen chloride, mercury, and total selected metals (arsenic, beryllium, cadmium, chromium, lead, manganese, nickel, and selenium). The Stony Point, Cromwell, and Burrillville Compressor Stations are major HAP sources. The Project includes the installation of small natural gas-fired turbine compressor fuel gas heaters at the Stony Point, Cromwell, and Burrillville Compressor Stations. The new fuel gas heaters would be considered affected sources under Subpart DDDDD. Therefore, the Project would be subject to the requirements of Subpart DDDDD. Compliance with this subpart may include performance testing, fuel analyses, recordkeeping, and notification requirements.

Subpart JJJJJ of Part 63 applies only to certain new and existing boilers at area sources, where a boiler is defined as “an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water.” The rule does not apply to natural gas-fired boilers. The Southeast and Chaplin Compressor Stations are both area sources of HAP. Any new heating devices proposed as part of the AIM Project would be fired by natural gas, and therefore the Project is not expected to be subject to Subpart JJJJJ requirements.

In summary, the Project is subject to Part 63 Subpart YYYY, Subpart ZZZZ, and Subpart DDDDD NESHAP requirements.

#### Conformity of General Federal Actions

The lead federal agency must conduct a conformity analysis if a federal action would result in the generation of emissions that would exceed the conformity threshold levels of the pollutant(s) for which an air basin is designated nonattainment or maintenance. According to section 176(c) of the CAA (Title 40 CFR Part 93 Subpart B), a federal agency cannot approve or support any activity that does not conform to an approved SIP. Conforming activities or actions should not, through additional air pollutant emissions:

- cause or contribute to new violations of the NAAQS in any area;
- increase the frequency or severity of any existing violation of any NAAQS; or
- delay timely attainment of any NAAQS or interim emission reductions.

General conformity assessments must be completed when the total direct and indirect emissions of a project would equal or exceed specified pollutant thresholds on a calendar year basis for each nonattainment or maintenance area. With regard to the Project, the relevant general conformity pollutant thresholds are shown in table 4.11.1-3.

The thresholds in table 4.11.1-3 are based on the current air quality designations (e.g., serious nonattainment, moderate nonattainment, maintenance, etc.).

Operational emissions for the Project are presented in section 4.11.1.3. The operational emissions that would be permitted or otherwise covered by major or minor NSR permitting programs are not subject to the general conformity applicability analysis. Estimated emissions for the Project subject to review under the general conformity thresholds (construction emissions and operational emissions not subject to major or minor NSR permitting), along with a comparison to the applicable general conformity threshold are presented in table 4.11.1-5.

Designated Pollutant	Designated Area	Threshold (tpy)	Pollutant or Precursor	2015 Total Non-Exempt Emissions (tons) <sup>a</sup>	2016 Total Non-Exempt Emissions (tons) <sup>a</sup>	2017 Ongoing Operational Emissions (tons)
Ozone	New York – N. New Jersey – Long Island, NY-NJ-LI-CT	50	VOC	8.9	37.1	18.1
		100	NO <sub>x</sub>	34.9	82.1	0.4
	Greater Connecticut	50	VOC	10.5	14.7	19.3
		100	NO <sub>x</sub>	15.1	2.7	0.2
	Poughkeepsie, NY	50	VOC	0.3	1.5	<0.1
		100	NO <sub>x</sub>	1.7	3.4	0.0
	Providence (all of RI), RI	50	VOC	0.5	0.0	0.0
		100	NO <sub>x</sub>	3.0	0.0	0.0
PM <sub>2.5</sub>	Boston-Lawrence-Worcester (E. Mass), MA	50	VOC	12.4	19.2	22.6
		100	NO <sub>x</sub>	13.1	16.2	5.6
	New York – N. New Jersey – Long Island, NY-NJ-LI-CT	100	PM <sub>2.5</sub>	2.2	9.4	0.2
		100	SO <sub>2</sub>	<0.1	0.2	<0.1
CO	New York – N. New Jersey – Long Island, NY-NJ-LI-CT	100	NO <sub>x</sub>	23.0	82.1	0.4
		100	CO	17.7	79.1	0.3
	Hartford-New Britain-Middletown, CT	100	CO	28.2	0.5	0.0
	New Haven-Meriden-Waterbury, CT	100	CO	1.1	1.2	0.2
	Boston, MA	100	CO	23.8	28.2	1.0

<sup>a</sup> Includes construction emissions and any non-exempt operating emissions for the identified time period.  
Notes: NY = New York; NJ = New Jersey; LI = Long Island; CT = Connecticut; RI = Rhode Island; MA = Massachusetts.



As shown in table 4.11.1-5, during all years of construction, emission estimates would not exceed general conformity applicability thresholds. Based upon this evaluation, a general conformity assessment is not required. It should be noted that should the schedule for construction change, or modifications to the Project result in emissions that would exceed the general conformity applicability threshold in one calendar year, FERC would be required to prepare a General Conformity Determination at that time.

#### Greenhouse Gas Emissions and the Mandatory Reporting Rule

The EPA's Mandatory Reporting of Greenhouse Gases Rule requires reporting of GHG emissions from suppliers of fossil fuels and facilities that emit greater than or equal to 25,000 metric tons of GHG (as CO<sub>2</sub>e) per year. Although the rule does not apply to construction emissions, we have provided GHG construction emission estimates, as CO<sub>2</sub>e, for accounting and disclosure purposes in table 4.11.1-6. Operational GHG emission estimates for the Project are presented, as CO<sub>2</sub>e, in table 4.11.1-7. Based on the emission estimates presented, actual GHG emissions from operation of the modified compressor stations have the potential to exceed the 25,000 metric tpy reporting threshold for the Mandatory Reporting Rule. The Mandatory Reporting Rule does not require emission control devices and is strictly a reporting requirement for stationary sources based on actual emissions. If the actual emissions from any of the compressor stations are equal to or greater than 25,000 metric tpy, Algonquin would be required to comply with all applicable requirements of the rule.

#### **State Air Quality Regulations**

This section discusses the potentially applicable state air regulations for the proposed facilities. These regulations include state permitting programs, which are further described by state in the following sections. Some states within the Project area have developed standards for mobile sources or construction activities. New York and Connecticut developed standards to limit emissions from diesel engines through idling restrictions (i.e., 6 NYCRR Part 217-3, and RCSA § 22a-174-19), and New York developed standards on diesel engine retrofitting in 6 NYCRR Part 248 on diesel engine retrofitting. These standards as they apply to Project activities are further described in section 4.11.1.3.

#### New York

The NYSDEC authorizes both construction and operation of emission sources under one permit. Facilities apply for and are issued minor facility registrations (for minor NSR sources) under 6 NYCRR Subpart 201-4 and state facility permits (for synthetic minor sources or minor NSR sources with emissions above certain thresholds) under 6 NYCRR Subpart 201-5. Emission sources or activities listed under 6 NYCRR Subpart 201-3 are exempt from the registration and permitting provisions of 6 NYCRR Subparts 201-4, 201-5, and 201-6.

Project activities involving air permitting associated with the Stony Point and Southeast Compressor Stations have been summarized under federal air permitting programs.

Project activities in New York also include modifications to the Peekskill, Cortlandt, and Stony Point M&R Stations. The modifications to the Peekskill and Cortlandt M&R Stations would include new natural gas-fired in-line gas heaters; however, because the maximum rated heat input capacity of the heaters are proposed to be less than 10 MMBtu/hr. Algonquin has reviewed the current design of these M&R stations and determined that state-level permits would not be required for these activities.

#### Connecticut

The CTDEEP has established state NSR permitting thresholds at RCSA § 22a-174-3a(a)(1) for new emission units and modifications to existing units of 15 tons or more per year of any individual air pollutant. The CTDEEP also has a permit-by-rule program to which the Project would be subject in RCSA § 22a-174-3b.

Project activities involving air permitting associated with the Cromwell and Chaplin Compressor Stations have been summarized under federal air permitting programs. The proposed replacement emergency generators for the Cromwell and Chaplin Compressor Stations would be operated under a permit-by-rule.

Project activities in Connecticut include modifications to 13 existing M&R stations, the installation of one new M&R station, and the removal of an existing M&R station. The proposed modifications to the 13 existing M&R stations range in scale from a complete station rebuild, to adding new in-line gas heaters, or adding or replacing a meter run. The proposed new Oakland Heights M&R Station would include an in-line gas heater. Algonquin has reviewed the current design of these M&R stations and determined that state-level permits would not be required for these activities.

#### Massachusetts

The MADEP requires that any natural gas-fired fuel utilization equipment resulting in an increase in potential emissions of any single air contaminant equal to or greater than 1 tpy and with a rated maximum heat input capacity of greater than 10 MMBtu/hr and less than 40 MMBtu/hr obtain a Limited Plan Approval prior to construction. However, emissions from emission units installed in accordance with the Industry Performance Standards at 310 Code of CMR 7.26 are not included when calculating an increase in potential emissions for purposes of determining applicability under 310 CMR 7.02(4)(a)1 and 2. Any fuel utilization equipment with a rated maximum heat input capacity of less than 10 MMBtu/hr and utilizing natural gas is exempt from Massachusetts plan approval requirements.

Project activities in Massachusetts include two new proposed M&R stations and proposed modifications to eight existing M&R stations. The new Assonet and West Roxbury M&R Stations would include new in-line heaters. Modifications to eight existing M&R stations range from replacing existing natural gas-fired in-line gas heaters to adding a low flow meter. Algonquin has reviewed the current design of these M&R stations and determined that state-level permits would not be required for these activities.

### 4.11.1.3 Air Emission Impacts and Mitigation

#### Construction Emissions

Air emissions would be generated during construction of the new pipeline, replacement of existing pipeline, modifications at five existing compressor stations, construction of three new M&R stations, modifications at 24 existing M&R stations, and removal of one M&R station.

Construction activities for the proposed facilities and pipeline replacement activities would result in temporary increases in emissions of some pollutants due to the use of equipment powered by diesel or gasoline engines. Construction activities would also result in the temporary generation of fugitive dust due to land clearing, ground excavation, and cut and fill operations. Indirect emissions during construction of the Project would be generated by delivery vehicles and construction workers commuting to and from work areas.

Construction related emission estimates were based on the anticipated types of non-road and on-road equipment and their projected level of use, as well as fugitive dust emission estimates associated with construction activities. Table 4.11.1-6 presents the total direct and indirect estimated construction emissions for 2015 and 2016.

TABLE 4.11.1-6				
Potential Construction Emissions (tons per year) for the AIM Project				
Pollutant	2015 Direct Construction Emissions <sup>a</sup>	2016 Direct Construction Emissions <sup>a</sup>	2015 Indirect Construction Emissions <sup>b</sup>	2016 Indirect Construction Emissions <sup>b</sup>
NO <sub>x</sub>	66.2	98.1	1.6	2.1
CO	116.6	155.2	11.1	14.8
SO <sub>2</sub>	0.1	0.2	0.02	0.02
PM <sub>10</sub>	59.6	43.1	0.05	0.06
PM <sub>2.5</sub>	10.5 <sup>c</sup>	11.1 <sup>c</sup>	0.05 <sup>c</sup>	0.06 <sup>c</sup>
VOC	8.1	11.8	0.4	0.6
CO <sub>2</sub> e	13,879	23,780	1,056	1,381
HAP (total)	0.4	0.7	0.2	0.2
<sup>a</sup> Direct emissions include fugitive dust emissions and non-road and on-road construction emissions.				
<sup>b</sup> Indirect emissions include construction worker commuting emissions.				
<sup>c</sup> A separate PM <sub>2.5</sub> emission estimate was not provided for non-road and on-road construction emissions or for construction worker commuting emissions. PM <sub>2.5</sub> emissions were conservatively assumed to be the same as PM <sub>10</sub> emissions for non-road and on-road construction emissions.				

Fugitive dust would result from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic, vehicle types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity. Algonquin has prepared a Fugitive Dust Control Plan that describes the mitigation measures that would be implemented to control fugitive dust during Project construction, especially in sensitive areas such as road crossings, residences, and nonattainment areas. The mitigation measures described in the Fugitive Dust Control Plan are, in part:

- minimize the generation of fugitive dust by:
  - a. watering the construction workspace and access roads;
  - b. providing measures to limit track-out onto the roads (e.g. gravel entrances road cleanup);
  - c. maintaining a speed limit of 5 miles per hour (mph) on unsurfaced roads; and
  - d. covering open-bodied haul trucks and other measures to prevent hauled loads from generating dust;
- provide authority to construction inspectors to direct dust mitigation measures and stop work until dust control measures are installed; and
- establish monitoring for PM<sub>10</sub> and recordkeeping of dust control as implemented, with a dedicated monitor in place where construction would occur within 200 feet of a receptor (e.g., residence, church, or business).

We have reviewed the Fugitive Dust Control Plan and find it acceptable.

The construction phase of the proposed Project would result in the generation of diesel combustion emissions associated with the operation of construction equipment and vehicles. New York and Connecticut developed standards to limit emissions from diesel engines through idling restrictions (i.e., 6 NYCRR Part 217-3, and RCSA § 22a-174-19). In addition, some of the states that would be affected by the Project have developed standards (e.g., 6 NYCRR Part 248 on diesel engine retrofitting) for other methods of reducing diesel emissions, such as the use of low sulfur diesel and advanced pollution control technologies. Algonquin provided an estimate of construction-related emissions, which are presented in table 4.11.1-6 that includes diesel combustion emissions for the AIM Project. Additionally, Algonquin has committed to using ultra low sulfur diesel fuel and best available technology on non-road engines where feasible, to limit emissions from diesel combustion.

These construction emissions would occur over the duration of construction activity and would be emitted at different times and locations along the length of the Project. With the mitigation measures proposed by Algonquin, air quality impacts from construction equipment would be temporary and should not result in a significant impact on regional air quality.

## **Operation Emissions**

Modifications to the five compressor stations, modifications to five existing M&R stations, and three new M&R stations would be sources of air emissions during operation of the Project. One of the five compressor station modifications would require PSD review for GHG emissions, three of the five compressor station modifications would require new state-level or minor source NSR permits, and all five of the compressor station modifications would require revisions to the existing facility Title V operating permits. Tables 4.11.1-7 to 4.11.1-11 provide the potential emissions for the compressor station modifications.

TABLE 4.11.1-7

**Potential Operational Emissions for the Stony Point Compressor Station Modifications (tons per year) for the AIM Project**

Source	Emissions (tpy)							CO <sub>2</sub> e
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub> /PM <sub>2.5</sub>	Formaldehyde	Total HAPs	
Existing Station PTE	189	381	203	3.8	17	56	89	240,621
Two Proposed Compressor Units	38	50	5	4	8	0.3	1	135,833
Proposed Emergency Generator	1	1.3	0.6	<0.1	<0.1	0.3	0.3	287
Two Proposed Gas Heaters	0.5	0.7	0.2	<0.1	<0.1	<0.1	<0.1	596
Proposed Parts Washer	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0
New Fugitive Releases (Piping, Gas Releases, Tanks, Truck Loading)	0.0	0.0	-16	0.0	0.0	0.0	-1	-11,556
Total of Proposed Units	39.5	52.0	-9.8	4.0	8.0	0.6	0.3	125,160
Changes for Modified Compressor	-53	-76	-1	0.3	1	-1	-1	11,751
Changes for Units Proposed to be Removed	-85	-253	-119	-0.1	-10	-55	-79	-63,698
<b>Total of Proposed Modifications</b>	<b>-98.5</b>	<b>-277.0</b>	<b>-129.8</b>	<b>4.2</b>	<b>-1.0</b>	<b>-55.4</b>	<b>-79.7</b>	<b>73,213</b>
Proposed Modified Station PTE <sup>a</sup>	90.5	104.0	73.2	8.0	16.0	0.6	9.3	313,834
NNSR/NESHAP/PSD Applicability Threshold	25	100	25	40	15 (PM <sub>10</sub> ) 10 (PM <sub>2.5</sub> )	10	25	75,000
<sup>a</sup> These emissions represent the existing equipment emissions that would continue to operate after the proposed modifications, in addition to the new equipment associated with the Project.								

TABLE 4.11.1-8								
Potential Operational Emissions for the Southeast Compressor Station Modifications (tons per year)for the AIM Project								
Source	Emissions (tpy)							CO <sub>2</sub> e
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub> /PM <sub>2.5</sub>	Formaldehyde	Total HAPs	
Existing Station PTE	172	266	66	5	10	4	11	221,018
New Proposed Compressor Unit	12	21	2	1	2	0.1	0.4	44,458
Proposed Emergency Generator	1	1	1	<0.1	<0.1	0.3	0.3	287
Two Proposed Gas Heaters	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	199
Proposed Parts Washer	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0
New Fugitive Releases (Piping, Gas Releases, Tanks, Truck Loading)	0.0	0.0	8	0.0	0.0	0.0	1	4,745
Total of Proposed Units	13.2	22.2	11.5	1.0	2.1	0.4	1.7	49,689
Changes for Modified Compressor	-54	-70	-1	0.3	1	-1	-1	11,620
<b>Total of Proposed Modifications</b>	<b>-40.8</b>	<b>-47.8</b>	<b>10.5</b>	<b>1.3</b>	<b>3.1</b>	<b>-0.6</b>	<b>0.7</b>	<b>61,309</b>
Proposed Modified Station PTE <sup>a</sup>	131.2	218.2	76.5	6.3	13.1	3.4	11.7	282,327
NNSR/NESHAP/PSD Applicability Threshold	40	100	40	40	15 (PM <sub>10</sub> ) 10 (PM <sub>2.5</sub> )	10	25	75,000
<sup>a</sup> These emissions represent the existing equipment emissions that would continue to operate after the proposed modifications, in addition to the new equipment associated with the Project.								

TABLE 4.11.1-9								
Potential Operational Emissions for the Cromwell Compressor Station Modifications (tons per year) for the AIM Project								
Source	Emissions (tpy)							CO <sub>2</sub> e
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub> /PM <sub>2.5</sub>	Formaldehyde	Total HAPs	
Existing Station PTE	1,081	435.4	320.6	1.7	26.0	108	164	235,217
Proposed Compressor Unit	19.4	33.0	2.5	2.0	3.8	0.2	0.6	66,113
Proposed Emergency Generator	0.8	1.6	0.7	<0.1	<0.1	0.3	0.4	346
Proposed Gas Heater	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	199
Proposed Parts Washer	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0
New Fugitive Releases (Piping, Gas Releases)	0.0	0.0	8.5	0.0	0.0	0.0	0.8	4,745
<b>Total of Proposed Modifications</b>	<b>20.3</b>	<b>34.8</b>	<b>12.2</b>	<b>2.0</b>	<b>3.9</b>	<b>0.5</b>	<b>1.8</b>	<b>74,403</b>
Proposed Modified Station PTE <sup>a</sup>	1,101.3	470.2	332.8	3.7	29.9	108.5	165.8	309,620
NNSR/NESHAP/PSD Applicability Threshold	25	100	25	40	15 (PM <sub>10</sub> ) 10 (PM <sub>2.5</sub> )	10	25	75,000
<sup>a</sup> These emissions represent the existing equipment emissions that would continue to operate after the proposed modifications, in addition to the new equipment associated with the Project.								

TABLE 4.11.1-10								
Potential Operational Emissions for the Chaplin Compressor Station Modifications (tons per year) for the AIM Project								
Source	Emissions (tpy)							CO <sub>2</sub> e
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub> /PM <sub>2.5</sub>	Formaldehyde	Total HAPs	
Existing Station PTE	87.0	60.1	40.3	1.8	3.6	1.5	5.5	88,613
Proposed Compressor Unit	10.0	16.8	1.3	1.0	2.0	0.1	0.3	35,800
Proposed Emergency Generator	0.6	1.2	0.5	<0.1	<0.1	0.2	0.3	259
Proposed Gas Heater	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	199
Proposed Parts Washer	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0
New Fugitive Releases (Piping, Gas Releases)	0.0	0.0	8.5	0.0	0.0	0.0	0.8	4,744
<b>Total of Proposed Modifications</b>	<b>10.8</b>	<b>18.2</b>	<b>10.8</b>	<b>1.0</b>	<b>2.0</b>	<b>0.3</b>	<b>1.5</b>	<b>41,003</b>
Proposed Modified Station PTE <sup>a</sup>	97.8	78.3	51.1	2.8	5.6	1.8	7.0	129,616
NNSR/NESHAP/PSD Applicability Threshold	25	100	25	40	15 (PM <sub>10</sub> ) 10 (PM <sub>2.5</sub> )	10	25	75,000
<sup>a</sup> These emissions represent the existing equipment emissions that would continue to operate after the proposed modifications, in addition to the new equipment associated with the Project.								

TABLE 4.11.1-11								
Potential Operational Emissions for the Burrillville Compressor Station Modifications (tons per year) for the AIM Project								
Source	Emissions (tpy)						Total HAPs	CO <sub>2</sub> e
	NO <sub>x</sub>	CO	VOC	SO <sub>2</sub>	PM <sub>10</sub> /PM <sub>2.5</sub>	Formaldehyde		
Existing Station PTE	164.0	208.4	135	1.9	8.4	33.6	54.2	138,519
Proposed Compressor Unit	19.5	33.1	2.6	2.0	3.8	0.2	0.6	69,124
Proposed Emergency Generator	0.6	1.3	0.6	<0.1	<0.1	0.3	0.3	287
Proposed Gas Heater	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	199
Proposed Parts Washer	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0
New Fugitive Releases (Piping, Gas Releases)	0.0	0.0	8.5	0.0	0.0	0.0	0.8	4,745
<b>Total of Proposed Modifications</b>	<b>20.3</b>	<b>34.6</b>	<b>12.2</b>	<b>2.0</b>	<b>3.9</b>	<b>0.5</b>	<b>1.7</b>	<b>74,355</b>
Proposed Modified Station PTE <sup>a</sup>	184.3	243.0	147.2	3.9	12.3	34.1	55.9	212,874
NNSR/NESHAP/PSD Applicability Threshold	25	250	25	250	250 (PM <sub>10</sub> ) 250 (PM <sub>2.5</sub> )	10	25	75,000
<sup>a</sup> These emissions represent the existing equipment emissions that would continue to operate after the proposed modifications, in addition to the new equipment associated with the Project.								

As discussed in section 4.11.1.2, the proposed new and reconstructed M&R stations would not be subject to PSD review or state-level permitting. However, Algonquin provided an estimate of representative potential emissions from new proposed combustion sources at M&R stations, which are presented in table 4.11.1-12.

TABLE 4.11.1-12							
Potential Emissions from New Combustion Sources at M&R Stations for the AIM Project (tons per year)							
M&R Station	CO	NO <sub>x</sub>	VOC	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub> e <sup>a</sup>
New Bedford	8	5	1.5	<0.1	0.4	0.4	6,500
West Roxbury	1	0.5	0.2	<0.1	0.3	0.3	813
Assonet	0.1	0.1	<0.1	<0.1	<0.1	<0.1	81
Oakland Heights	0.1	0.1	<0.1	<0.1	<0.1	<0.1	81
Willimantic	0.1	0.1	<0.1	<0.1	<0.1	<0.1	81
Guilford	0.2	0.1	<0.1	<0.1	<0.1	<0.1	163
Peekskill	0.2	0.1	<0.1	<0.1	<0.1	<0.1	163
Cortlandt	0.1	0.1	<0.1	<0.1	<0.1	<0.1	81
<sup>a</sup> These emissions represent the estimated GHG emission estimates for similarly sized gas heaters on the Algonquin system, scaled based on combustion capacity.							

We received comments regarding leakage or fugitive releases from the proposed facilities. Fugitive releases at each compressor station were included in the in tables 4.11.1-7 to 4.11.1-11. Non-combustion related emissions would also occur from the pipeline and at the proposed M&R stations during normal operation. These emissions would include fugitive VOC releases from storage vessels and truck loading operations, as well as fugitive natural gas releases from piping components. Table 4.11.1-13 provides an annual estimate of these emission sources.



TABLE 4.11.1-13			
Non-Routine and Fugitive Operating Emissions (tons per year) for the AIM Project			
Pollutant	Fugitives & Non-Routine (M&R Stations)	Fugitives & Non-Routine (Pipeline)	Total
VOC	55.4	2.7	58.1
CO <sub>2</sub> e	68,968	712	69,680

Algonquin provided a summary of practices that would be implemented at modified compressor stations associated with the Project and practices that are currently in place at all Algonquin facilities to minimize methane emissions, which are a major source of GHG emissions from the proposed Project. Algonquin would use highly efficient turbine technology at the modified compressor stations, which would minimize emissions by being appropriately sized, efficient, and would include dry seals to minimize fugitive emissions. Algonquin also has a program in place for minimizing methane emissions at all of their facilities. Measures include replacing wet seals with dry seals at compressors, replacing older infrastructure to reduce blowdowns, installing leak detection monitoring systems, and participating in the EPA's National Gas Star Program to share best practices for reducing methane emissions.

Due to modifications on existing equipment and/or removal of existing compressors, the potential emissions of most pollutants at the Stony Point and Southeast Compressor Stations would be reduced from their current potential levels. However, Algonquin completed screening-level air quality modeling for NO<sub>2</sub>, PM<sub>2.5</sub>, PM<sub>10</sub>, CO, and SO<sub>2</sub> using the U.S. EPA's AERMOD model for the Stony Point and Southeast Compressor Station modifications, and using the U.S. EPA's AERSCREEN model for the Cromwell, Chaplin, and Burrillville Compressor Stations modifications to estimate the potential impacts on air quality as a result of the modifications. Table 4.11.1-14 summarizes the results of the modeling analyses.

The modeling analyses for all modeled pollutants at all five compressor stations showed that the Project, combined with background pollutant levels, would not contribute to a violation of the NAAQS. We reviewed the modeling analyses and agree with these conclusions.

As shown in table 4.11.1-6, construction of the AIM Project would result in the generation of approximately 40,096 tons (36,374 metric tons) of GHG emissions, as measured in CO<sub>2</sub>e. As shown in tables 4.11.1-7 to 4.11.1-11 and 4.11.1-13, operation of the modified compressor stations and non-routine and fugitive emissions from M&R stations and pipeline operation would result in a maximum of 1,038,096 tpy (941,745 metric tons) of GHG emissions, as measured in CO<sub>2</sub>e, if operated at full capacity (i.e., 8,760 hours per year). Although the GHG emissions appear large, the emissions are very small (0.4 percent) in comparison to the 2000 inventory of GHG emissions in the New England region of the United States of 224.01 metric tons of CO<sub>2</sub>e (NSCAUM, 2004).

Based on the identified estimated emissions from operation of the proposed Project facilities and review of the modeling analysis, we agree that the Project would result in continued compliance with the NAAQS, which are protective of human health, including children, the elderly, and sensitive populations.

We received several comments concerning the risk of radon exposure associated with the burning of natural gas at compressor stations and the in-home burning of natural gas originating from the Marcellus shale. In particular, we received comments that natural gas from the Marcellus shale region contains radon at much higher concentrations than gas produced in the Gulf Coast region. The downstream use of natural gas in the market areas, including the effects of burning natural gas and exposure to radon in homes, is beyond the scope of this EIS. Although the impacts of transportation of natural gas to downstream users are outside the scope of the EIS and beyond our jurisdiction, we have provided general background and a review of the literature on radon.

TABLE 4.11.1-14

## Summary of Predicted Air Quality Impacts for the AIM Project

Pollutant	Averaging Period	Background ( $\mu\text{g}/\text{m}^3$ )	Project Impact ( $\mu\text{g}/\text{m}^3$ )	Project Impact + Background ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )	NAAQS Consumed by Background and Project Impact (percent)
<b>Stony Point Compressor Station <sup>a</sup></b>						
NO <sub>2</sub>	1-Hour	77.8	65.6	143.4	188	76.2
	Annual	18.1	5.6	23.7	100	23.7
PM <sub>2.5</sub>	24-Hour	22.5	3.3	25.8	35	73.7
	Annual	8.2	0.5	8.7	12	72.5
PM <sub>10</sub>	24-Hour	39.0	5.5	44.5	150	29.7
CO	1-Hour	1,150	488.2	1,638.2	40,000	4.1
	8-Hour	920	265.2	1,185.2	10,000	11.9
SO <sub>2</sub>	1-Hour	23.6	10.1	33.7	196	17.2
	3-Hour	30.7	8.2	38.9	1,300	3.0
	24-Hour	13.1	3.1	16.2	365	4.4
	Annual	3.3	0.3	3.6	80	4.5
<b>Southeast Compressor Station <sup>a</sup></b>						
NO <sub>2</sub>	1-Hour	77.8	65.1	142.9	188	76.0
	Annual	18.1	6.8	24.9	100	24.9
PM <sub>2.5</sub>	24-Hour	24.0	3.4	27.4	35	78.2
	Annual	9.0	0.5	9.5	12	79.2
PM <sub>10</sub>	24-Hour	39.0	5.5	44.5	150	29.7
CO	1-Hour	1,150	348.9	1,498.9	40,000	3.7
	8-Hour	920	228.8	1,148.8	10,000	11.5
SO <sub>2</sub>	1-Hour	23.6	6.2	29.8	196	15.2
	3-Hour	30.7	7.4	38.1	1,300	2.9
	24-Hour	13.1	3.4	16.5	365	4.5
	Annual	3.3	0.2	3.5	80	4.4
<b>Cromwell Compressor Station <sup>a</sup></b>						
NO <sub>2</sub>	1-Hour	87.1	54.3	141.4	188	75.2
	Annual	-	5.1	5.1	100	5.1
PM <sub>2.5</sub>	24-Hour	22.3	2.0	24.3	35	69.4
	Annual	8.8	0.3	9.1	12	75.8
PM <sub>10</sub>	24-Hour	23.3	2.0	25.3	150	16.9
CO	1-Hour	1,795.4	121.9	1,917.3	40,000	4.8
	8-Hour	1,337.0	109.7	1,446.7	10,000	14.5
SO <sub>2</sub>	1-Hour	0.01	0.5	0.5	196	0.3
	3-Hour	0.007	0.5	0.5	1,300	<0.1
	24-Hour	-	0.3	0.3	365	0.1
	Annual	-	<0.1	<0.1	80	0.1
<b>Chaplin Compressor Station <sup>a</sup></b>						
NO <sub>2</sub>	1-Hour	87.1	72.5	159.6	188	84.9
	Annual	-	6.8	6.8	100	6.8
PM <sub>2.5</sub>	24-Hour	22.0	3.4	25.4	35	72.6
	Annual	7.9	0.6	8.5	12	70.8
PM <sub>10</sub>	24-Hour	23.3	3.4	26.7	150	17.8
CO	1-Hour	1,795.4	162.5	1,957.9	40,000	4.9
	8-Hour	1,337.0	146.3	1,483.3	10,000	14.8

TABLE 4.11.1-14 (cont'd)

## Summary of Predicted Air Quality Impacts for the AIM Project

Pollutant	Averaging Period	Background ( $\mu\text{g}/\text{m}^3$ )	Project Impact ( $\mu\text{g}/\text{m}^3$ )	Project Impact + Background ( $\mu\text{g}/\text{m}^3$ )	NAAQS ( $\mu\text{g}/\text{m}^3$ )	Percent of NAAQS Impact
SO <sub>2</sub>	1-Hour	0.01	1.5	1.5	196	0.8
	3-Hour	0.007	1.5	1.5	1,300	0.1
	24-Hour	-	0.9	0.9	365	0.2
	Annual	-	0.2	0.2	80	0.2
<b>Burrillville Compressor Station <sup>a</sup></b>						
NO <sub>2</sub>	1-Hour	78.3	79.5	157.8	188	83.9
	Annual	-	7.4	7.4	100	7.4
PM <sub>2.5</sub>	24-Hour	17.7	6.8	24.5	35	70.0
	Annual	6.6	1.1	7.7	12	64.2
PM <sub>10</sub>	24-Hour	23.0	6.8	29.8	150	19.9
CO	1-Hour	2,139.2	175.2	2,314.4	40,000	5.8
	8-Hour	1,489.8	157.7	1,647.5	10,000	16.5
SO <sub>2</sub>	1-Hour	0.02	4.6	4.6	196	2.4
	3-Hour	0.01	4.6	4.6	1,300	0.4
	24-Hour	-	2.8	2.8	365	0.8
	Annual	-	0.4	0.4	80	0.5

<sup>a</sup> Three operating scenarios were modeled. The worst-case scenario for each pollutant is presented.

Notes: NY = New York; LI = Long Island; RI = Rhode Island; CT = Connecticut; MA = Massachusetts.

Radon is a naturally occurring radioactive gas that is odorless and tasteless. It is produced by the radioactive decay of radium-226, which is found in uranium ores; phosphate rock; shales; igneous and metamorphic rocks such as granite, gneiss, and schist; and, to a lesser degree, in common rocks such as limestone. Radioactive decay is a natural, spontaneous process in which an atom of one element decays or breaks down to form another element by losing atomic particles (protons, neutrons, or electrons). (USGS, 2014).

The decay of each radioactive element occurs at a very specific rate. How fast an element decays is measured in terms of the element "half-life," or the amount of time for one half of a given amount of the element to decay to a stable non-radioactive element. The half-life of radon is only 3.8 days, which means that, if a jar was filled with radon, only half of the radon would be left after 3.8 days. But the newly made daughter products of radon would also be in the jar, including polonium, bismuth, and lead (USGS, 2014). The first decay product of radon is Polonium 218, which has a half-life of about 3 minutes. The Polonium decays to Lead 214, which has a half-life of about 27 minutes; Lead 214 decays to Bismuth 214, which has a half-life of 19.7 minutes; and Bismuth 214 decays to Polonium 214, which then quickly decays to stable non-radioactive lead.

Radon levels in outdoor air, indoor air, soil air, and groundwater can be very different. Outdoor air radon levels range from less than 0.1 to about 30 picocuries per liter (pCi/L). The EPA identifies the average outdoor radon levels at about 0.4 pCi/L. Radon in soil air (the air that occupies the pores in soil) ranges from 20 or 30 to more than 100,000 pCi/L; most soils in the United States contain between 200 and 2,000 pCi of radon per liter of soil air. The amount of radon dissolved in groundwater ranges from about 100 to nearly 3 million pCi/L (USGS, 2014). Radon in indoor air ranges from less than 1 to about 3,000 pCi/L. The EPA identifies that the average indoor radon level is 1.3 pCi/L and recommends that indoor levels be less than 2 to 4 pCi/L. Also, the U.S. Congress passed the Indoor Radon Abatement Act

in 1988, which established the long-term goal that indoor air radon levels be equal or better than outdoor air radon levels.

Radon can be entrained in fossil fuels including natural gas. Because radon is not destroyed by combustion, burning natural gas containing radon can increase the level of radon within a home (Agency for Toxic Substances and Disease Registry, 2010). While radon is inert, long-term (chronic) exposure to its decay products (progeny) can be carcinogenic (lung cancer), with increased risk to smokers.

Most radon in homes comes from radon in the soil that seeps into homes through cracks in the foundation or slab (EPA, 2014f). Radon is also found in the water in homes, in particular, homes that have their own well rather than municipal water. However, radon from water in the home generally contributes to only a small proportion (less than 5 percent) of the total radon in indoor air in most housing (EPA, 2014f). People may also ingest trace amounts of radon with food and water. However, inhalation is the main route of entry into the body for radon and its decay products. Almost all risk from radon comes from breathing air containing radon and its decay products.

We received comments concerning the potential buildup of decay products within the pipeline and the risk of releasing these products to the environment either during pipeline maintenance or the removal of existing pipe. It should be noted that the half-lives of the radioactive decay products are relatively short (under 1 hour combined) and that, over time, these products would decay to non-radioactive lead. As a result, only a limited amount of radioactive decay material would be in the pipeline at any given time because any material that is within the pipeline for a prolonged period would become non-radioactive.

Algonquin would clean the pipeline to be removed prior to its being reused for another other purpose. Algonquin also conducts annual inspections and regular cleaning of its operational pipelines. Any liquids or solids removed during these cleanings would be collected and treated as hazardous material that would be disposed of at a licensed facility in accordance with federal, state, and local regulations. These measures would minimize the risk that any radioactive solids would be released to the environment.

In early 2012, a paper raised concern regarding radon levels in natural gas from the Marcellus shale (Resnikoff, 2012). This paper used theoretical calculations to identify that radon concentrations in Marcellus shale natural gas range between 36.9 and 2,576 pCi/L, with a resulting estimated concentrations in the home of 0.0187 to 0.482 pCi/L. However, a subsequent study by the USGS found that concentrations of radon in natural gas samples from the Marcellus shale and overlapping Devonian sandstones, as measured at the wellhead, ranged from 1 to 79 pCi/L and 7 to 65 pCi/L, respectively (Rowan and Kraemer, 2012). These results would be further diluted in household air, which was outside the scope of the study. In July 2012, a study used natural gas samples collected from Texas Eastern and Algonquin pipelines from the Marcellus shale gas fields (Anspaugh, 2012). The samples from this study presented measured radon concentrations in natural gas pipelines ranging from 16.9 to 44.1 pCi/L, with resulting in-home concentrations estimated at 0.0042 to 0.0109 pCi/L. These levels are significantly less than the average indoor and outdoor radon levels.

We note that several factors limit the indoor exposure to radon from natural gas. Radon's half-life, defined as the time it takes for the element to decay to half its initial concentration, is relatively short (3.8 days). The time needed to gather, process, store, and deliver natural gas allows a portion of the entrained radon to decay, which decreases the amount of radon in the gas before it is used in a residence. Additionally, radon concentrations are reduced when a natural gas stream undergoes upstream processing to remove liquefied petroleum gas. Processing can remove an estimated 30 to 75 percent of the radon from natural gas (Johnson et al., 1973). Other research suggests that the cumulative decay of radon from

wellhead to burner tip is around 60 percent (Gogolak, 1980). Also, radon exposure associated with the combustion of natural gas may be lower now due to the improved ventilation and increased energy efficiency of modern boilers, furnaces, and hot water heaters, as well as new building codes requiring venting of gas-fired stoves and ovens.

The levels of radon and its decay products associated with the burning of natural gas at compressor stations would be lower than at the wellhead. As is the case for the burning of natural gas in the home, the levels of radon and its decay products would be reduced due to upstream processing, natural decay, and efficiency of the turbines. Any radon in the compressor station emissions would be vented to the atmosphere and quickly diluted by mixing with the surrounding air.

While the FERC has no regulatory authority to set, monitor, or respond to indoor radon levels, many local, state, and federal entities (e.g., the EPA) establish and enforce radon exposure standards for indoor air. Based on the analysis above, we find that the risk of exposure to radon is not significant.

#### **4.11.2 Noise**

Noise quality can be affected both during construction and operation of facilities. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level ( $L_{eq}$ ) and day-night sound level ( $L_{dn}$ ). The  $L_{eq}$  is the level of steady sound with the same total (equivalent) energy as the time-varying sound of interest, averaged over a 24-hour period. The  $L_{dn}$  is the  $L_{eq}$  plus 10 dBA added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used to assess noise impacts because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 6 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise.

##### **4.11.2.1 Existing Noise Levels**

Algonquin provided ambient noise surveys and acoustical analyses for the five proposed compressor station modifications, the five existing M&R stations with significant proposed modifications, three new proposed M&R stations, and two new mainline regulators (MLR) that would have an NSA within 0.5 mile of the station.

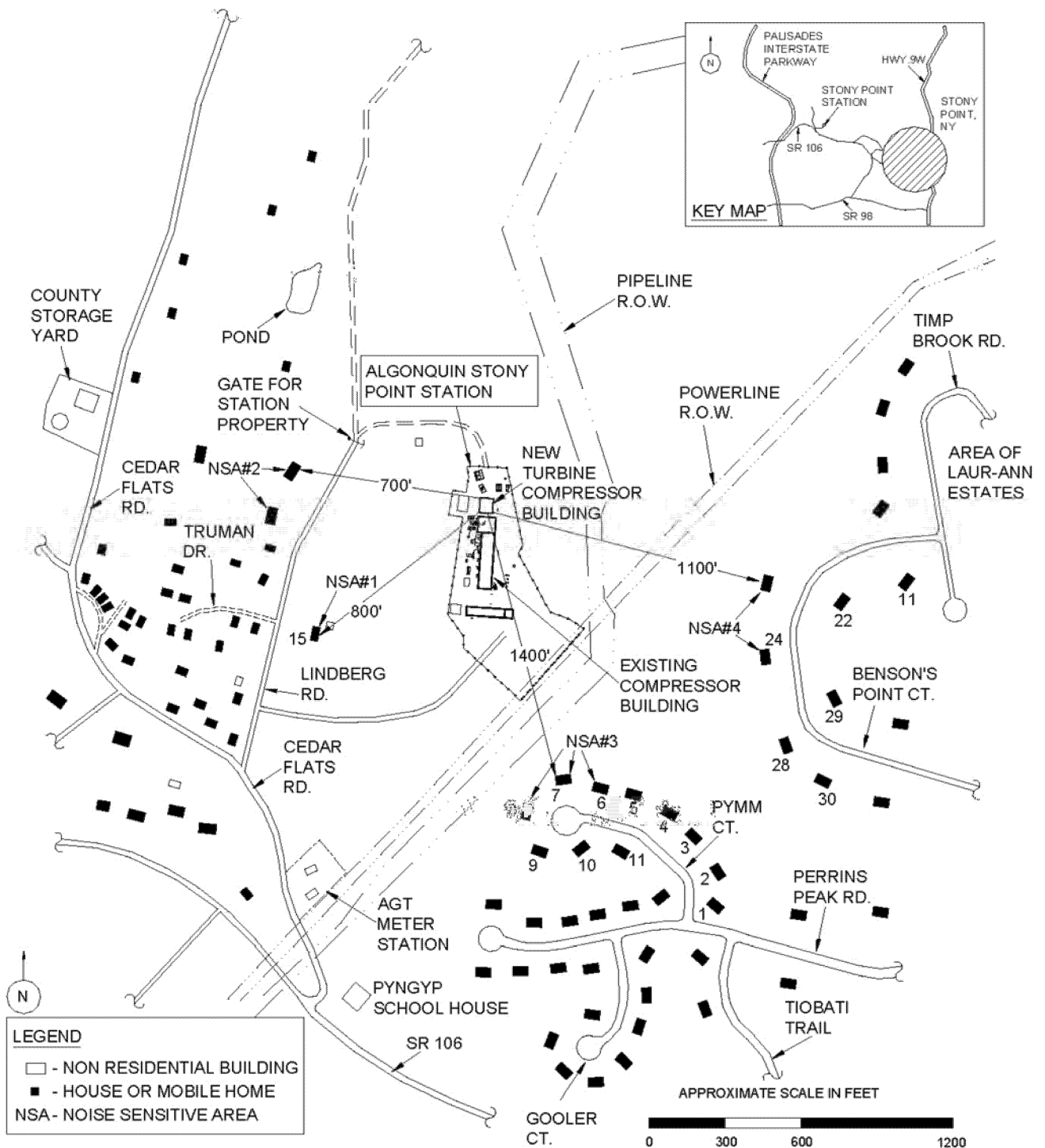
#### **Stony Point Compressor Station**

The Stony Point Compressor Station is located in Rockland County, New York, approximately 2 miles west of Stony Point, New York. The station is located approximately 0.5 mile east of the Palisades Interstate Parkway. The most recent acoustical survey was completed for the Stony Point Compressor Station in 2006. There are several NSAs located in the vicinity, the closest of which are residences located generally west, east, and south of the compressor station site. The distance and direction from the closest existing or proposed compressor building to the NSAs are presented in table 4.11.2-1 and shown on figure 4.11.2-1. Although existing noise levels exceed our 55 dBA  $L_{dn}$  criterion at two NSAs, the four existing compressor units to be abandoned at this station were authorized prior to implementation of noise standards.

TABLE 4.11.2-1

**Noise Levels at the Nearest Noise-Sensitive Areas to the Proposed Modified Compressor Stations for the AIM Project<sup>a</sup>**

Location/Facility	Distance to NSA (feet)	Direction to NSA	Ambient Noise $L_{dn}$ <sup>b,c</sup> (dBA)
<b>NEW YORK</b>			
<b>Existing Stony Point Compressor Station</b>			
NSA 1	650	West-southwest	62.9
NSA 2	700	West	63.0
NSA 3	800	South-southeast	49.9
NSA 4	1,000	East	49.6
<b>Existing Southeast Compressor Station</b>			
NSA 1	1,200	Northwest	66.0 (37.7) <sup>d</sup>
NSA 2	1,300	South-southwest	52.2 (36.9) <sup>d</sup>
NSA 3	2,200	Southeast	53.3 (31.4) <sup>d</sup>
<b>CONNECTICUT</b>			
<b>Existing Cromwell Compressor Station</b>			
NSA 1	850	West	60.6 (48.7) <sup>d</sup>
NSA 2	920	Southwest	60.6 (63.2) <sup>d,e</sup>
NSA 3	1,620	North-northwest	60.6 (58.2) <sup>d,e</sup>
<b>Existing Chaplin Compressor Station</b>			
NSA 1	1,350	North-northeast	48.0 (37.3) <sup>d</sup>
NSA 2	1,200	Northeast	46.7 (38.5) <sup>d</sup>
NSA 3	1,400	East-northeast	46.7 (36.0) <sup>d</sup>
<b>RHODE ISLAND</b>			
<b>Existing Burrillville Compressor Station</b>			
NSA 1	2,050	East-northeast	56.9
NSA 2	2,100	Northeast	52.4
NSA 3	3,320	North	52.4 <sup>e</sup>
NSA 4	3,610	West	45.0 <sup>f</sup>
NA – not available			
<sup>a</sup> The modifications at the existing Oxford Compressor Station would only involve the restaging of an existing compressor unit. This activity would not result in additional operational noise.			
<sup>b</sup> Current station levels based on noise surveys as described in table 4.11.2-1.			
<sup>c</sup> Existing noise levels ( $L_{dn}$ ) including the current compressor station operating at full load.			
<sup>d</sup> The existing compressor station is not the dominant noise source influencing ambient sound levels. The sound contribution from the compressor station only is provided in parenthesis.			
<sup>e</sup> Background noise levels were not measured because FERC staff added this NSA during the evaluation of the Project. Background noise levels were estimated using other NSAs in the area within similar proximity to major roadways and the compressor station.			
<sup>f</sup> Background noise levels were not measured because FERC staff added this NSA during the evaluation of the Project. Because no similar NSAs for which background levels were measured were available, a background noise level was estimated based on typical rural noise levels included in the EPA's 1974 document <i>Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety</i> .			



**Figure 4.11.2-1**  
**AIM Project**  
Existing Stony Point Compressor Station  
Closest Noise-Sensitive Areas

### **Southeast Compressor Station**

The Southeast Compressor Station is located in Putnam County, New York, approximately 3 miles south-southeast of Brewster, New York. The Connecticut state line borders the station on the east side, and Interstate 84 borders the north property line of the station. The most recent acoustical survey was completed for the Southeast Compressor station in 2009. There are several NSAs located in the vicinity, which are located generally west, southwest, and southeast of the compressor station site and include residences and an apartment complex. The distance and direction from the closest existing or proposed compressor building to the NSAs are presented in table 4.11.2-1 and shown on figure 4.11.2-2.

### **Cromwell Compressor Station**

The Cromwell Compressor Station is located in Middlesex County, Connecticut. The property for the station is primarily located in the Township of Cromwell, although there is a small section of the property that is in the Township of Rocky Hill. The property is heavily wooded, except for the station access road and station site. The most recent acoustical survey was completed for the Cromwell Compressor Station on January 23, 2014. Algonquin identified the only NSA as a residence located 850 feet west of the existing compressor building as presented in table 4.11.2-1 and shown on figure 4.11.2-3. However, we also note two additional residences, one of which is located approximately 920 feet southwest of the existing compressor building, and the second of which is located approximately 1,620 feet north-northwest of the proposed new compressor building. We have included these two NSAs in our analysis. Also, existing noise levels exceed our 55 dBA  $L_{dn}$  criterion at two NSAs; however, the majority of the existing compressor units at this station were authorized prior to implementation of noise standards.

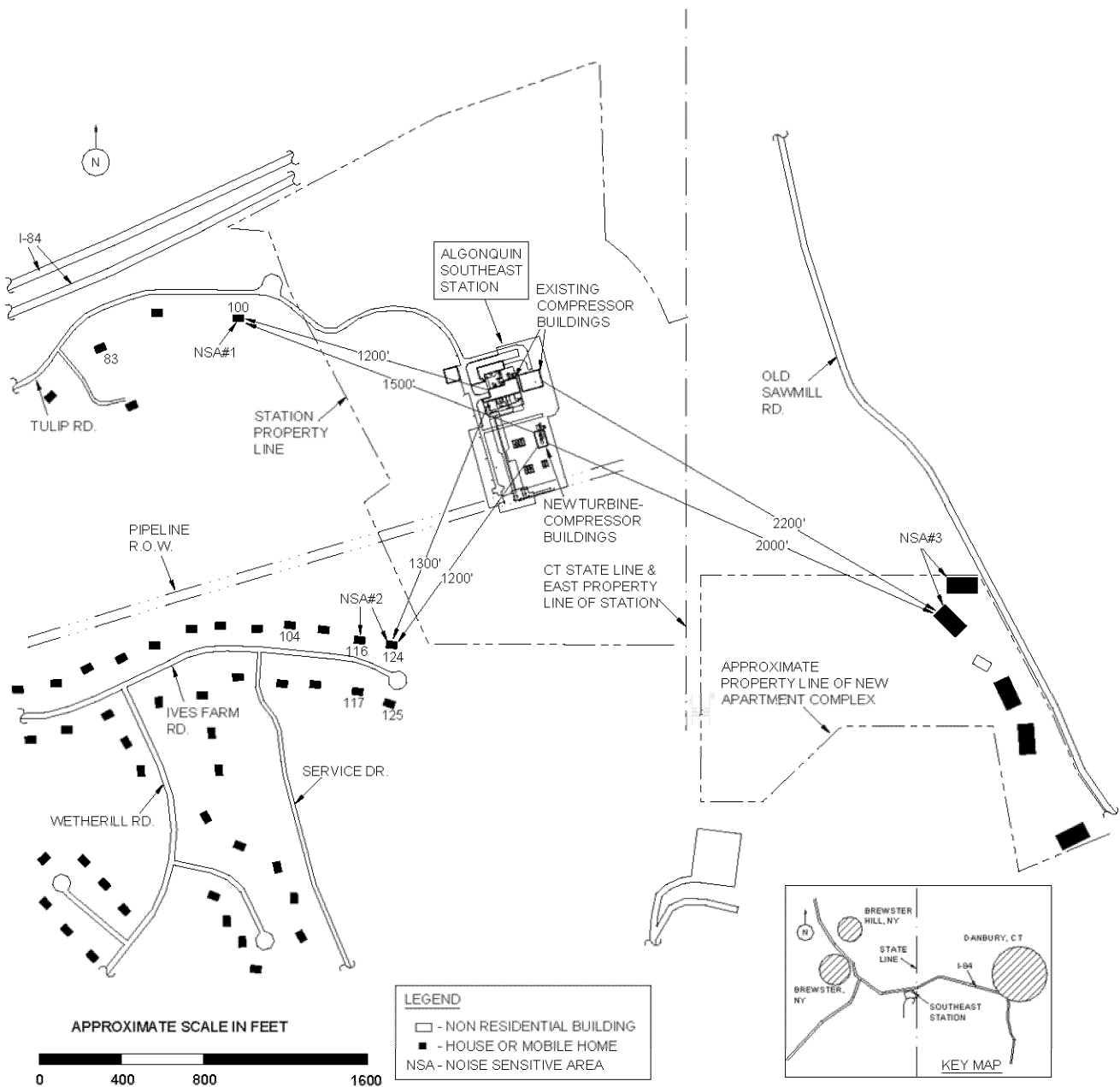
### **Chaplin Compressor Station**

The Chaplin Compressor Station is located in Windham County, Connecticut, approximately 2 miles northwest of the town of Chaplin. The property is heavily wooded, except for the station access road and station site. The most recent acoustical survey was completed for the Chaplin Compressor Station in 2007. The nearest NSAs are residences located along Tower Hill Road north and northeast of the station. The distance and direction to the nearest NSAs from the nearest existing or proposed compressor building are presented in table 4.11.2-1 and shown on figure 4.11.2-4.

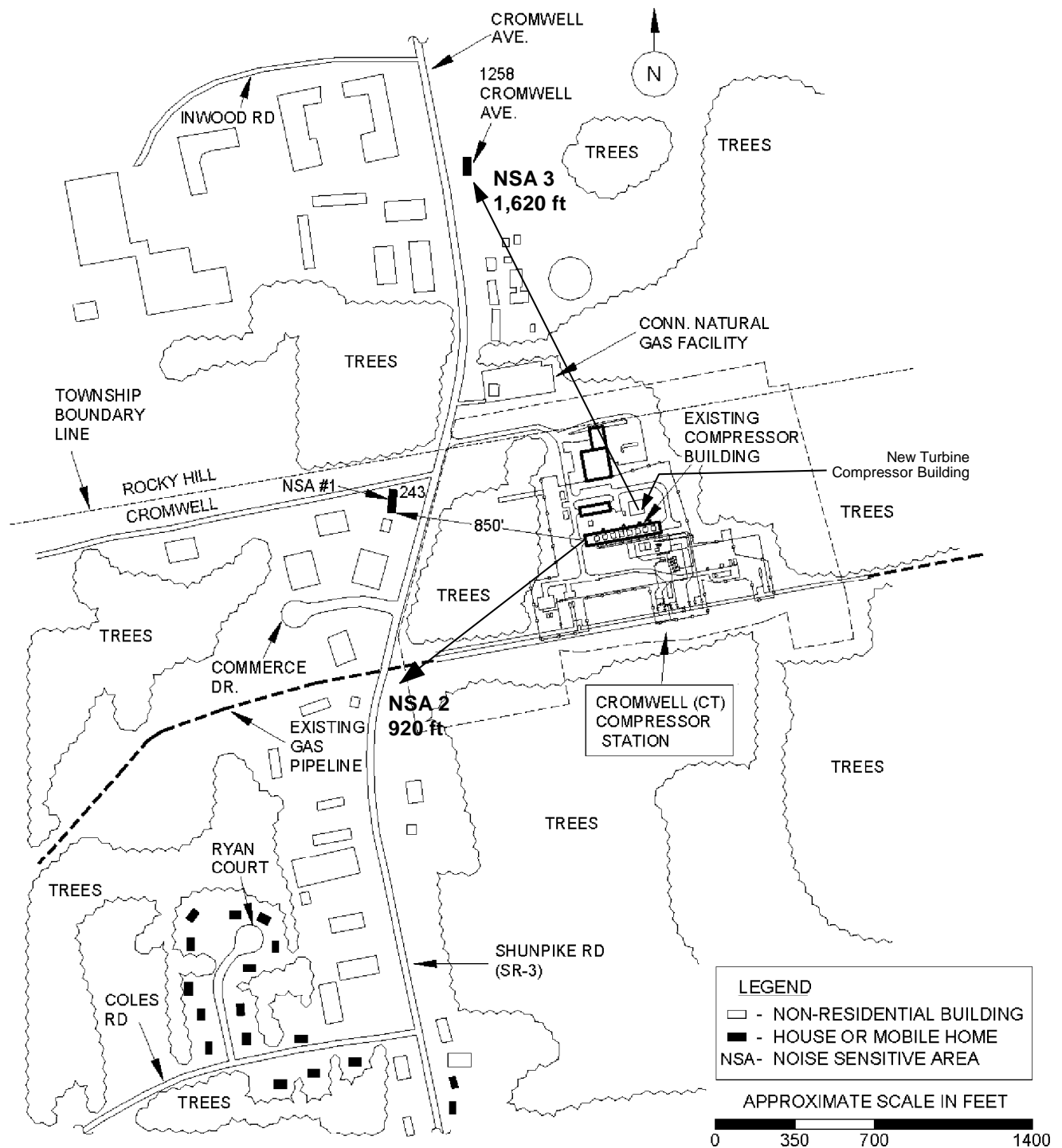
### **Burrillville Compressor Station**

The Burrillville Compressor Station is located in Providence County, Rhode Island, approximately 25 miles from the city of Providence. The property is heavily wooded, except for the station site. The land use in the surrounding area is primarily rural and recreational. The most recent acoustical survey was completed for the Burrillville Compressor Station in 2014. The nearest NSAs are both permanent and non-permanent (i.e., vacation) residences. Algonquin identified the distance and direction to two of the nearest NSAs (representing multiple residences) from the nearest existing or proposed compressor building, which are presented in table 4.11.2-1 and shown on figure 4.11.2-5. We also note a group of residences are located north of the existing compressor building, represented by the closest NSA at 3,320 feet from the facility, and a group of residences west of the proposed new compressor building, represented by the closest NSA at 3,610 feet from the facility. We have included these NSAs in our analysis. Also, existing noise levels exceed our 55 dBA  $L_{dn}$  criterion at one NSA; however, three of the five existing compressor units at this station were authorized prior to implementation of noise standards.

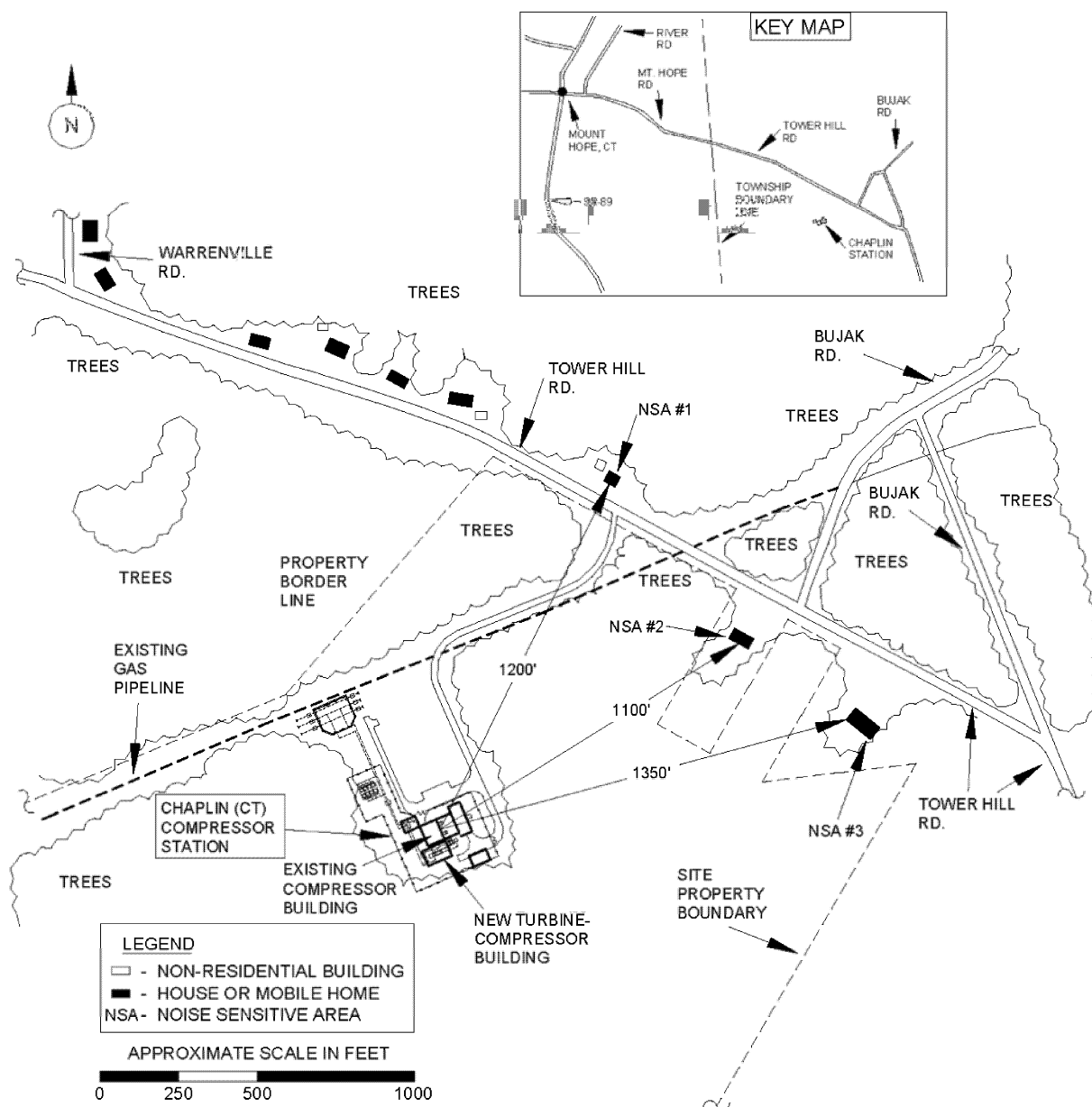




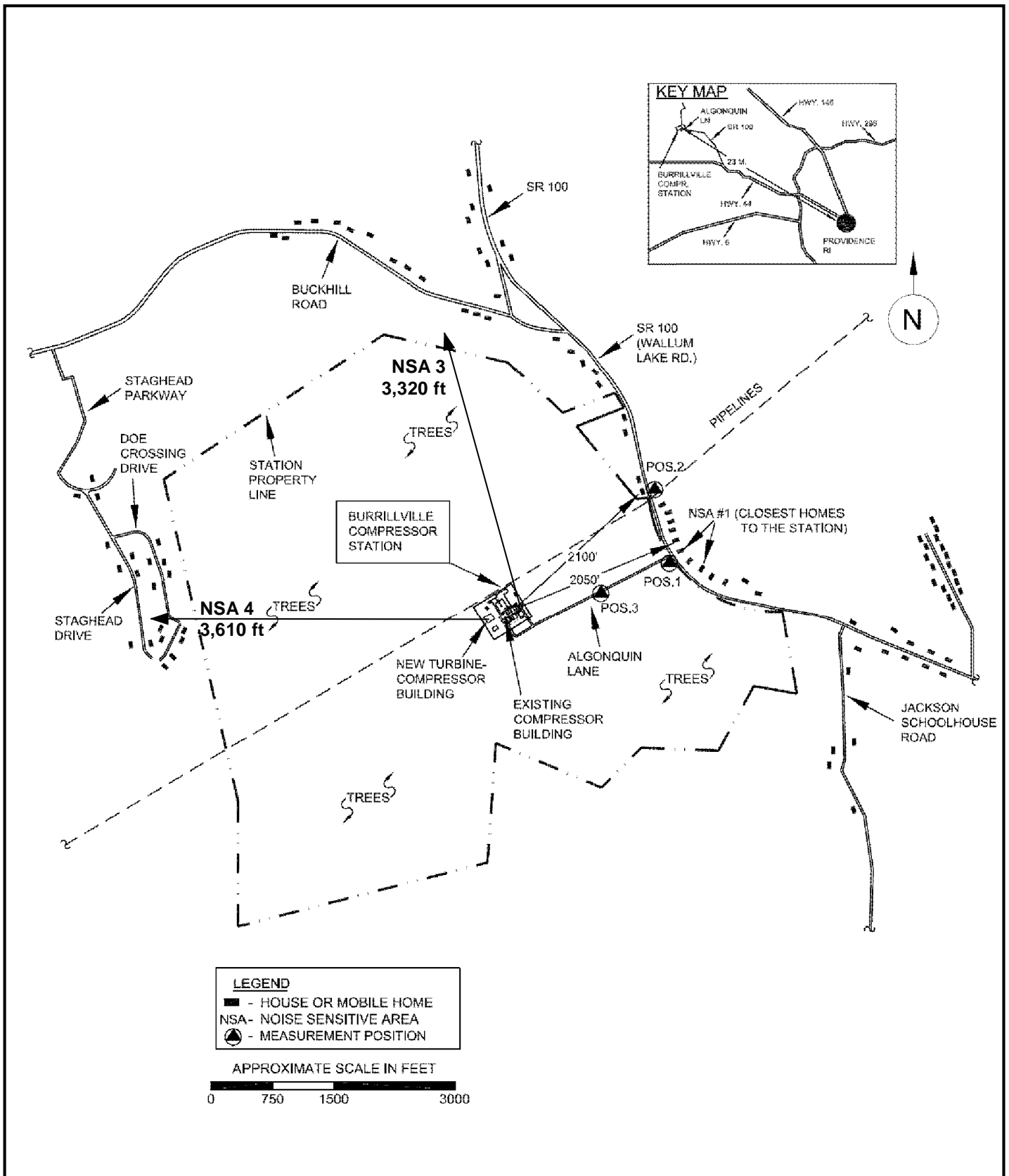
**Figure 4.11.2-2**  
**AIM Project**  
 Existing Southeast Compressor Station  
 Closest Noise-Sensitive Areas



**Figure 4.11.2-3**  
**AIM Project**  
 Existing Cromwell Compressor Station  
 Closest Noise-Sensitive Areas



**Figure 4.11.2-4**  
**AIM Project**  
 Existing Chaplin Compressor Station  
 Closest Noise-Sensitive Areas



**Figure 4.11.2-5**  
**AIM Project**  
 Existing Burrillville Compressor Station  
 Closest Noise-Sensitive Areas

## **M&R Stations and MLR Sites**

The Project involves modification to two existing M&R stations in New York that involve major changes with the potential to generate additional noise. The Project also involves the addition of one proposed MLR in New York. The existing Peekskill M&R and Cortlandt M&R Stations are both located in Westchester County, New York. The proposed Stoney Street MLR would also be located in Westchester County, New York. Acoustical analyses were completed for the Peekskill and Cortlandt M&R Stations on March 27, 2014 and for the proposed Stoney Street MLR from November 13 to 14, 2013. The nearest NSA to the existing M&R stations and the proposed new MLR site are presented in table 4.11.2-2.

The Project involves modification to two existing M&R stations in Connecticut that involve major changes with the potential to generate additional noise. The Project also involves the addition of one proposed M&R station and one proposed MLR in Connecticut. The existing Willimantic M&R Station is located in Windham County, Connecticut. The existing Guilford M&R Station is located in New Haven County, Connecticut. The proposed new Oakland Heights M&R Station would be located in New London County, Connecticut. The proposed new Clapboard Ridge Road MLR would be located in Fairfield County, Connecticut. Acoustical surveys were completed for the existing Willimantic and Guilford M&R Stations, the proposed new Oakland Heights M&R Station, and the proposed new Clapboard Ridge Road MLR from November 13 to 14, 2013. The distance and direction to the nearest NSAs from each of these existing or proposed stations are presented in table 4.11.2-2.

In Massachusetts, the Project involves modification to one existing M&R stations that involves major changes with the potential to generate additional noise. The Project also involves the addition of two proposed M&R stations. The existing New Bedford M&R Station and the proposed new Assonet M&R Station would be located in Bristol County, Massachusetts. The proposed new West Roxbury M&R Station would be located in Suffolk County, Massachusetts. Acoustical surveys were completed for the proposed new Assonet and West Roxbury M&R Stations from November 13 to 14, 2013. Due to the commercial/industrial nature of the existing New Bedford M&R Station and relative distance to the nearest NSAs, an acoustical survey was not completed for this station; however, an acoustical analysis was completed using estimated ambient sound levels. The distance and direction to the nearest NSAs from each of these proposed stations are presented in table 4.11.2-2.

### **4.11.2.2 Noise Regulatory Requirements**

#### **Federal Noise Regulations**

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated an  $L_{dn}$  of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate to potential noise impacts from the proposed Project at NSAs. Due to the 10 dBA nighttime penalty added prior to the calculation of the  $L_{dn}$ , for a facility to meet the 55 dBA  $L_{dn}$  limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA  $L_{eq}$  at any NSA.

The proposed modifications at 19 of the M&R stations associated with the Project, as well as the MLR sites located greater than 0.5 mile from nearby NSAs, would not change or affect noise conditions at nearby receptors; therefore, no further analysis of these facilities is required.

TABLE 4.11.2-2			
Background Noise Levels at the Nearest NSAs to the Existing and Proposed M&R Stations and MLR Sites for the AIM Project			
Location/Facility	Distance to NSA	Direction to NSA	Ambient $L_{dn}$ <sup>a</sup>
<b>NEW YORK</b>			
<b>Existing Peekskill M&amp;R Station</b>			
NSA 1	170 feet	Southeast	57.9 dBA <sup>b</sup>
<b>Existing Cortlandt M&amp;R Station</b>			
NSA 1	90 feet	Northwest	58.7 dBA <sup>b</sup>
<b>Proposed Stoney Street MLR</b>			
NSA 1	275 feet	Northeast	47.5 dBA <sup>c</sup>
<b>CONNECTICUT</b>			
<b>Existing Willimantic M&amp;R Station</b>			
NSA 1	90 feet	North	47.4 dBA <sup>b</sup>
<b>Existing Guilford M&amp;R Station</b>			
NSA 1	350 feet	Northeast	49.8 dBA <sup>b</sup>
<b>Proposed Oakland Heights M&amp;R Station</b>			
NSA 1	130 feet	North	50.5 dBA <sup>c</sup>
<b>Proposed Clapboard Ridge Road MLR</b>			
NSA 1	90 feet	North	49.2 dBA <sup>c</sup>
<b>MASSACHUSETTS</b>			
<b>Existing New Bedford M&amp;R Station</b>			
NSA 1	2,200 feet	South	50.0 dBA <sup>b</sup>
<b>Proposed Assonet M&amp;R Station</b>			
NSA 1	325 feet	South-Southeast	59.7 dBA <sup>c</sup>
<b>Proposed West Roxbury M&amp;R Station</b>			
NSA 1	100 feet	Southwest	52.1 dBA <sup>c</sup>
<sup>a</sup> Ambient levels based on noise surveys as described in table 4.11.2-1. <sup>b</sup> Ambient background noise level ( $L_{dn}$ ) including the existing M&R station. <sup>c</sup> Ambient background noise level ( $L_{dn}$ ) of the proposed M&R station or MLR site.			

## State and Local Noise Regulations

### New York

There are no applicable statewide noise regulations in New York. Chapter 148 of the Town of Stony Point Town Code generally prohibits excessive noise, including operating an internal combustion powered machine without a proper muffler or other noise-deadening device (Town of Stony Point, 2014). Chapter 96 of the Town of Southeast Code entitled “Noise Ordinance of the Town of Southeast, New York” sets a maximum sound level in light industrial areas to 80 dBA during the day and 70 dBA at night (or impulsive sound is limited to 90 and 80 dBA during the day and night, respectively). Exceptions to these noise standards apply to construction activities occurring Monday through Friday, 7:00 a.m. to 8:00 p.m., and Saturday from 9:00 a.m. to 5:00 p.m. (Town of Southeast, 2014). Accordingly, the FERC noise standards establish more stringent noise requirements for Stony Point and Southeast Compressor Stations and thus impacts are discussed below based on the FERC standards.

### Connecticut

Connecticut has established noise regulations that apply to the compressor stations, M&R stations, and MLR site. These noise regulations (Title 22a, Part 69, Section 22a-69-1/2/3/4) establish standard noise limits emitting from a sound source, as measured at certain Noise Zones (i.e., land use

category) when emitted from other Noise Zones. Table 4.11.2-3 summarizes the Noise Zone Standards that establish noise level requirements (CTDEEP, 2014e).

TABLE 4.11.2-3 Summary of Connecticut Noise Zone Standards and Noise Limits				
Noise Zone/Class Emitter	Receptor Class C	Receptor Class B	Receptor Class A/Day <sup>a</sup>	Receptor Class A/Night <sup>b</sup>
Class C Emitter	70 dBA	66 dBA	61 dBA	51 dBA
Class B Emitter	62 dBA	62 dBA	55 dBA	45 dBA
Class A Emitter	62 dBA	55 dBA	55 dBA	45 dBA
<sup>a</sup> Daytime is defined by Connecticut noise standards as the hours between 7:00 a.m. and 10:00 p.m. <sup>b</sup> Nighttime is defined by Connecticut noise standards as the hours between 10:00 p.m. and 7:00 a.m. Notes: Class A Noise Zone = generally defined as residential land use. Class B Noise Zone = generally defined as commercial land use. Class C Noise Zone = generally defined as industrial land use.				

According to the Connecticut noise regulations, where mixed land use exists, the least restrictive of the class categories apply. In the case of the compressor stations, M&R stations, and MLR site, the noise level that corresponds to a Class C Emitter to a Receptor Class A would apply. Therefore, the station noise should not exceed 51 dBA  $L_{eq}$  at the adjacent Class A Noise Zone (i.e., property line of the adjacent residences). Because these compressor stations are scheduled to operate on a 24-hour basis, the noise level emitted from these stations should not exceed a sound level of 51 dBA  $L_{eq}$  at the adjacent Class A Noise Zone (i.e., property line of adjacent residences) to demonstrate compliance with the state standard. Consequently, the FERC sound requirement for a compressor station (i.e., an  $L_{dn}$  of 55 dBA, which corresponds to an  $L_{eq}$  of 48.6 dBA at the nearby NSAs) is generally more stringent for residences than the Connecticut state noise requirements (sound level of 51 dBA  $L_{eq}$ ). However, in the unusual situation of a house set back on a very large parcel of land, the FERC sound level limit could be satisfied at the house and the Connecticut noise limit exceeded at the property line. Upon review of the site and existing NSAs for the Project, this unusual condition does not exist.

The Town of Cromwell has established noise regulations in Chapter 168 of the town ordinances. Generally, industrial sites cannot exceed noise levels of 70 dBA to other industrial receptors, 66 dBA to other commercial receptors, or 61 dBA (daytime) or 51 dBA (nighttime) to residential receptors (Town of Cromwell, 2014). Noise generated during construction is exempt from these requirements during daytime hours. As the state code criteria described above is more conservative than the town ordinance, and the FERC standard is more stringent than the state standard, the noise analysis for the Cromwell Compressor Station is based on the FERC standard.

### Rhode Island

Rhode Island does not have any state-level noise regulations, but allows each individual community to regulate noise through community by-laws. No local noise ordinances were identified that would be applicable to the Project.

### Massachusetts

Massachusetts has established noise regulations (310 CMR 7.10). The MADEP provided further guidance in a policy document dated February 1, 1990, which provides the following noise standards.

A source of sound will be considered to be violating the MADEP's noise regulation (310 CMR 7.10) if the source:

1. increases the broadband sound level by more than 10 dB above ambient (i.e., 10 dBA above ambient limit), or
2. produces a "pure tone" condition, when any octave band center frequency sound pressure level (SPL) exceeds the two adjacent center frequency SPLs by 3 decibels or more.

These criteria are measured both at the property line and at the nearest inhabited residence. Ambient is defined as the lowest background A-weighted sound level that is exceeded 90 percent of the time (i.e.,  $L_{90}$ ) (MADEP, 2014b). For the purposes of assessing the "pure tone" condition, the octave-band SPLs of 31.5 to 8,000 hertz were used. Based on review of the noise guideline adopted by the MADEP and site ambient sound surveys, the following summarizes the estimated noise criterion/guideline for Algonquin's new meter stations in Massachusetts:

- the noise attributable to the New Bedford M&R Station should be equal to or less than 50.0 dBA at the closest residential property lines or nearby residences;
- the noise attributable to the Assonet M&R Station should be equal to or less than 59.6 dBA at the closest residential property lines or nearby residences; and
- the noise attributable to the West Roxbury M&R Station should be equal to or less than 49.1 dBA at the property line of the station.

In general, the resulting noise criteria for the new meter stations in Massachusetts are considered to be approximately equal to the FERC sound requirement (i.e.,  $L_{eq}$  of 48.6 dBA at nearby NSA) for the new West Roxbury M&R Station and higher than the FERC sound requirement for the existing New Bedford M&R Station and new Assonet M&R Station.

The City of Boston's Municipal Code (Chapter 16, Section 26) defines unreasonable or excessive noise as noise in excess of 50 dBA between the hours of 11:00 p.m. and 7:00 a.m. or in excess of 70 dBA at all other hours. As the state-level noise criteria are more stringent than the City of Boston's municipal code, the analyses described above are based on the state's standards.

#### **4.11.2.3 Noise Level Impacts and Mitigation**

##### **Construction Noise**

Noise would be generated during construction of the pipeline and during construction and operation of the aboveground facilities. Pipeline construction would be conducted by a number of separate crews working at different locations along the pipeline route. The rate of progress of each crew would depend on the specific activities they are engaged in but would typically progress between a hundred and several thousand feet per day. An exception to this would be the crews involved in HDD construction, which would be stationary for weeks to months depending on the length of the drill and the hardness of the substrate being drilled. Thus, construction activities in any one area could last from several weeks to several months on an intermittent basis. Construction equipment would be operated on an as-needed basis during this period. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. Noise mitigation measures that would be employed during construction include ensuring that the sound muffling devices, which are provided as standard equipment by the construction equipment manufacturer, are kept in good working order. If needed, additional noise abatement techniques and other measures could be implemented during the construction phase to mitigate construction noise disturbances at NSAs. Generally, nighttime noise is not expected to increase during construction because most construction activities would be limited to daytime hours.



An exception to this would be certain HDD activities, which are expected to continue into the nighttime hours. Because of this and the fact that the equipment involved in the HDDs would be stationary for an extended period of time, there is a greater potential for a prolonged noise impact. Algonquin proposes to use the HDD method at two locations (Hudson River crossing and Interstate 84/Still River crossing). The Hudson River and Interstate 84/Still River HDDs are anticipated to occur between March and October 2015, with an estimated duration of 5 and 7 months, respectively. Algonquin performed ambient noise surveys and acoustical assessments of the HDD sites within 0.5 mile of NSAs to determine background noise levels and the predicted noise levels at NSAs.

The results of Algonquin's noise assessments, including the distance and direction of the nearest NSAs from the HDD site, and the predicted noise resulting from each HDD operation are summarized in table 4.11.2-4. Additional NSAs are also present farther from the noise generating sources at the proposed HDD entrance/exit points; however, Project noise levels at further NSAs in each direction would be lower than presented in table 4.11.2-4 due to additional noise attenuation. The acoustical assessments indicate that mitigation would be necessary at all proposed HDD locations to reduce the predicted noise generated by the HDD operations below the FERC noise requirement (i.e.,  $L_{dn}$  of 55 dBA) at the closest NSAs.

TABLE 4.11.2-4							
Noise Quality Analysis for the Horizontal Directional Drilling Sites Associated with the AIM Project							
Planned HDD Site (Entry or Exit Point)	Distance and Direction of the Closest NSA to Site Center	Ambient $L_{dn}$ <sup>a</sup>	Estimated $L_{dn}$ of the HDD Without Mitigation	Estimated Noise Reductions from mitigation (dB)	Estimated $L_{dn}$ of the HDD with Mitigation (dBA)	$L_{dn}$ of HDD + Ambient $L_{dn}$ (dBA)	Potential Change in the Ambient Noise (dB)
<b>Hudson River HDD <sup>b</sup></b>							
HDD (west entry site)	330 feet/west- southwest	45.9	66.6	13.1	53.5	54.2	8.3
	490 feet/south <sup>c</sup>	45.9	68.8	14.0	54.8	55.4	9.5
	610 feet/north	45.9	60.9	12.8	48.1	50.1	4.2
HDD (east entry site)	240 south	48.1	70.9	16.4	54.5	55.4	7.3
<b>Interstate Highway 84/Still River HDD <sup>b</sup></b>							
HDD (south entry site)	450 feet/southeast	57.8	66.9	13.1	53.8	59.3	1.5
HDD (north entry site)	400 feet/east	55.2	68.1	14.6	53.5	57.4	2.2
	410 feet/south	55.2	67.9	14.5	53.4	57.4	2.2
	610 feet/west	55.2	64.1	14.4	49.7	56.3	1.1
<sup>a</sup> Noise levels are based on ambient monitoring completed in the vicinity of the HDD entrance/exit point. <sup>b</sup> Both HDDs would be completed using the intersect method, which employs drill rigs on both sides of the crossing. As such, both ends of the HDD are referred to as the entry side. <sup>c</sup> No attenuation for foliage or land contour was assumed for this NSA based on the lack of vegetative cover between the HDD entrance/exit point and the NSA.							
Note: dB = decibels, dBA = decibels on the A-weighted scale							

Algonquin has committed to implementing the following noise mitigation measures at the HDD entrance and exit points:

- Hudson River HDD crossing (east and west sides)
  - a. use a “close-fit” partial enclosure for the hydraulic power unit (HPU) associated with the drilling rig (e.g., 16-foot barrier around the HPU);
  - b. partially enclose the unenclosed engines (e.g., high-pressure mud pump);
  - c. employ a “low-noise” generator for the mud/cleaning system (i.e., generator set designed with a factory-installed acoustical enclosure); and
  - d. employ a residential–grade exhaust silencer on all engines.
- Interstate 84/Still River HDD crossing (north and south sides)
  - a. employ a temporary noise barrier along the south side and east side of the South Side HDD site workspace (i.e., constructed of plywood panels or noise barrier blanket material (e.g., 16-foot high);
  - b. use a “close-fit” partial enclosure for the South Side HDD HPU associated with the drilling rig (e.g., 16-foot barrier around the HPU);
  - c. partially enclose the South Side HDD unenclosed engines (e.g., high-pressure mud pump) and the North Side HPU associated with the drilling rig;
  - d. use a “noise-reduction tent” over the HDD workspace (constructed of a heavy canvas material supported over steel trusses and lined with acoustical sound-absorptive/barrier material designed with a septum mass layer);
  - e. employ a “low-noise” generator for the mud/cleaning systems (i.e., generator set designed with a factory-installed acoustical enclosure); and
  - f. employ a residential–grade exhaust silencer on all engines.

We reviewed Algonquin’s noise assessment and agree that the mitigation measures committed to by Algonquin should result in noise levels in compliance with the FERC’s noise criterion of 55 dBA  $L_{dn}$  at nearby NSAs. However, given the populated nature of the areas surrounding the two proposed HDD crossings, **we recommend that:**

- **Algonquin file in the weekly construction status reports the following for the Hudson River and Interstate 84/Still River HDD sites:**
  - a. **the noise measurements from the nearest NSA for each drill entry site, obtained at the start of drilling operations;**

- b. the noise mitigation that Algonquin implemented at the start of drilling operations; and**
- c. any additional mitigation measures that Algonquin would implement if the initial noise measurements exceeded an  $L_{dn}$  of 55 dBA at the nearest NSA and/or increased noise is over ambient conditions greater than 10 decibels.**

In response to traffic concerns raised by municipalities due to the proposed construction along portions of the West Roxbury Lateral, Algonquin has committed to nighttime construction along Providence Highway and the High Street/East Street intersection along the West Roxbury Lateral to minimize traffic impacts on this roadway. While Providence Highway is a busy commercial street, its intersection with High Street and East Street is within a residential area. There are some NSAs in proximity to this area that could be impacted by noise and vibration generated by nighttime construction. However, we note that the Project construction would be similar to other road construction activities, which would also likely occur at night to avoid similar traffic impacts. Further, Algonquin would be required to use smaller or less equipment to construct in the area due to smaller workspace constraints in the Dedham/West Roxbury area, resulting in lesser impacts than a major road construction project.

Algonquin has estimated that construction in residential areas would progress about 40 to 200 feet per day, which means construction should last several days or a couple of weeks within any given neighborhood. Therefore, nighttime construction in these residential areas would result in a temporary impact on noise levels to the nearby NSAs. Section 4.8.3.1 describes Algonquin's Environmental Complaint Resolution Procedure Plan, which would be available in the event of a landowner complaint during construction.

### **Operational Noise**

The modified compressor stations would generate noise on a continuous basis (i.e., 24 hours per day) once operating. Some noise would also be generated by the operation of modified M&R stations, the proposed new M&R Stations, and the proposed new MLRs. The noise impact associated with the operation of these aboveground facilities would be limited to the vicinity of the facilities. The specific operational noise sources associated with these facilities and their estimated impact at the nearest NSAs are described below.

Algonquin completed an acoustical analysis to identify the estimated noise impacts at the nearest NSAs from the proposed changes at the five compressor stations. The results of these acoustical analyses are presented in table 4.11.2-5 and include various assumed noise control measures. Algonquin assumed the following noise mitigation measures in its compressor station acoustical analyses:

- compressor building – enclosing the new turbine(s) and compressor(s), including the use of appropriate building materials;
- adequate muffler system for each turbine exhaust system;
- acoustical pipe insulation for outdoor aboveground gas piping;
- adequate silencer for each turbine air intake system;
- low-noise lube oil cooler for each compressor unit; and/or
- low-noise gas cooler.

TABLE 4.11.2-5

Noise Quality Analysis for the Compressor Stations Proposed to Be Modified for the AIM Project

Location/Facility	Distance and Direction to NSA	Current Station $L_{dn}$ (dBA) <sup>a</sup>	$L_{dn}$ Attributable to the Modifications (dBA)	Station $L_{dn}$ + $L_{dn}$ Of Proposed Changes (dBA)	Potential Change in Noise Level Attributable to the Station (dB)
<b>NEW YORK</b>					
<b>Existing Stony Point Compressor Station <sup>a</sup></b>					
NSA 1	650 feet (WSW)	62.9	49.4	62.9	0.0
NSA 2	700 feet (W)	63.0	50.7	63.0	0.0
NSA 3	800 feet (SSE)	49.9	41.1	50.9	1.0
NSA 4	1,000 feet (E)	49.6	46.4	51.3	1.7
<b>Existing Southeast Compressor Station</b>					
NSA 1	1,200 (NW)	66.0	44.1	66.0	0.0
NSA 2	1,300 (SSW)	52.2	45.8	53.1	0.9
NSA 3	2,200 (SE)	53.3	40.7	53.5	0.2
<b>CONNECTICUT</b>					
<b>Existing Cromwell Compressor Station</b>					
NSA 1	850 feet (W)	48.7 <sup>b</sup>	45.0	50.3	0.6
NSA 2	920 feet (SW)	63.2 <sup>b</sup>	44.3	63.3	0.1
NSA 3	1,620 feet (NNW)	58.2 <sup>b</sup>	39.4	58.2	0.0
<b>Existing Chaplin Compressor Station</b>					
NSA 1	1,200 feet (NNE)	48.0	41.7	48.9	0.9
NSA 2	1,100 feet (NE)	46.7	42.8	48.2	1.5
NSA 3	1,350 feet (ENE)	46.7	41.3	47.8	1.1
<b>RHODE ISLAND</b>					
<b>Existing Burrillville Compressor Station</b>					
NSA 1	2,050 feet (ENE)	56.9	39.2	57.0 <sup>c</sup>	0.1
NSA 2	2,100 feet (NE)	52.4	39.2	52.6	0.2
NSA 3	3,320 feet (N)	52.4	35.0	52.5	0.1
NSA 4	3,610 feet (W)	45.0	34.3	45.4 <sup>d</sup>	0.4
<sup>a</sup> Stony Point Compressor Station noise assessment does not account for the removal of 4 older compressor units; therefore, the projected future noise levels are conservative. <sup>b</sup> The existing compressor station is not the dominant noise source influencing ambient sound levels. The sound contribution from the compressor station only is provided. <sup>c</sup> Based on the FERC staff's assessment of the noise data presented by Algonquin, the new station equipment would result in an imperceptible increase in noise at nearby NSAs. <sup>d</sup> Background noise levels were not measured because FERC staff added this NSA during the evaluation of the Project. Because no similar NSAs for which background levels were measured were available, a background noise level is not provided.					

Although Algonquin evaluated the implementation of various mitigation measures at each compressor station, it is currently evaluating noise control measures needed at the existing compressor stations. We reviewed the compressor station noise analyses and agree that, if properly implemented, these noise control measures would ensure that noise attributable to the modified compressor stations would be either less than 55 dBA  $L_{dn}$  at nearby NSAs, or where the noise currently attributable to the compressor station is greater than 55 dBA  $L_{dn}$ , the noise attributable to the station modifications would cause no perceptible change to station noise levels.

At the Stony Point Compressor Station, existing noise levels are above 55 dBA  $L_{dn}$  as a result of existing compressor station equipment that was installed prior to implementation of the FERC noise criterion. These four units would be abandoned as a result of this project, resulting only in facilities installed after the FERC noise criterion. This would result in noise levels below those projected by Algonquin, as all units would be required to comply with the FERC criterion. However, to ensure noise levels from the Stony Point Compressor Station are not significant, **we recommend that:**

- **Algonquin file a noise survey with the Secretary no later than 60 days after placing the authorized units at the Stony Point Compressor Station in service. If a full load condition noise survey of the entire station is not possible, Algonquin shall instead file an interim survey at the maximum possible horsepower load and file the full load survey within 6 months. If the noise attributable to the operation of all of the equipment at the Stony Point Compressor Station under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Algonquin should file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the in-service date. Algonquin should confirm compliance with the  $L_{dn}$  of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Because existing noise levels are above 55 dBA  $L_{dn}$ , Algonquin is still completing the final compressor station designs, and to ensure that the noise control measures used are properly implemented at the Southeast, Cromwell, and Burrillville Compressor Stations, **we recommend that:**

- **Algonquin should file noise surveys with the Secretary no later than 60 days after placing the authorized units at the Southeast, Cromwell, and Burrillville Compressor Stations in service. If a full load condition noise survey of the entire station is not possible, Algonquin should file an interim survey at the maximum possible horsepower load and file the full load surveys within 6 months. If the noise attributable to the operation of the modified compressor station at full or interim power load conditions exceeds existing noise levels at any nearby NSAs that are currently at or above an  $L_{dn}$  of 55 dBA, or exceeds 55 dBA  $L_{dn}$  at any nearby NSAs that are currently below 55 dBA  $L_{dn}$ , Algonquin should file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the in-service date. Algonquin should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Also, to ensure that the noise control measures still under final development are properly implemented at Chaplin Compressor Station, we recommend that:

- **Algonquin file a noise survey with the Secretary no later than 60 days after placing the authorized units at the Chaplin Compressor Station in service. If a full load condition noise survey of the entire station is not possible, Algonquin shall instead file an interim survey at the maximum possible horsepower load and file the full load survey within 6 months. If the noise attributable to the operation of all of the equipment at the Chaplin Compressor Station under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Algonquin should file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the in-service date. Algonquin should confirm compliance with the  $L_{dn}$  of 55 dBA requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

Algonquin also completed acoustical analyses on the modified M&R stations that would result in additional noise, the proposed new M&R stations, and the MLR sites that are within 0.5 mile of nearby NSAs and to determine what, if any, noise control measures would be needed to ensure compliance with federal and local noise ordinances. The results of these acoustical analyses are presented in table 4.11.2-6 and indicate that the noise resulting from the operation of these facilities would be in compliance with the applicable noise standards.

Algonquin has stated that they are currently evaluating noise control measures to be implemented at the proposed modified and new M&R stations and MLR sites. The acoustical analyses completed for these facilities included detailed recommendations for noise control measures, which, if properly implemented, would ensure that noise attributable to the facilities was less than 55 dBA  $L_{dn}$ . It is our experience that M&R stations and MLRs may vary widely in terms of actual noise impacts after being placed in service relative to predicted noise impacts from these stations. In addition, the number of residences in proximity to the proposed or existing stations further justify the need for post-construction noise surveys for several of the proposed modified and new M&R stations and MLR site to verify that noise would be within acceptable limits at nearby NSAs. To verify compliance with the FERC's noise standards, **we recommend that:**

- **Algonquin file noise surveys with the Secretary no later than 60 days after placing the Guilford, Willimantic, Oakland Heights, and West Roxbury M&R Stations and the proposed new Clapboard Ridge Road MLR in service. If the noise attributable to the operation of any M&R Station or MLR at full load exceeds an  $L_{dn}$  of 55 dBA at any nearby NSA, Algonquin should file a report on what changes are needed and should install the additional noise controls to meet the level within 1 year of the in-service date. Algonquin should confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.**

TABLE 4.11.2-6					
Noise Quality Analysis for the Applicable M&R Stations and the MLR Sites for the AIM Project					
Location/Facility	Distance and Direction to NSA	Current Ambient L <sub>dn</sub> (dBA)	L <sub>dn</sub> Attributable to the New Station / Modifications (dBA)	Station L <sub>dn</sub> + Ambient L <sub>dn</sub> after Proposed Changes (dBA)	Potential Change in Ambient Noise Level (dB)
<b>NEW YORK</b>					
<b>Existing Peekskill M&amp;R Station</b>					
NSA 1	170 feet (SE)	57.9	49.4	58.5	0.6
<b>Existing Cortlandt M&amp;R Station</b>					
NSA 1	90 feet (NW)	58.7	53.0	59.7	1.0
<b>Proposed Stoney Street MLR</b>					
NSA 1	275 feet (NE)	47.5	47.3	50.4	2.9
<b>CONNECTICUT</b>					
<b>Existing Willimantic M&amp;R Station</b>					
NSA 1	90 feet (N)	47.4	50.2	52.0	4.6
<b>Existing Guilford M&amp;R Station</b>					
NSA 1	350 feet (NE)	49.8	39.7	50.2	0.4
<b>Proposed Oakland Heights M&amp;R Station</b>					
NSA 1	130 feet (N)	50.5	46.4	51.9	1.4
<b>Proposed Clapboard Ridge Road MLR</b>					
NSA 1	90 feet (N)	49.2	50.5	52.9	3.7
<b>MASSACHUSETTS</b>					
<b>Existing New Bedford M&amp;R Station</b>					
NSA 1	2,200 feet (S)	50.0	31.9	50.1	0.1
<b>Proposed Assonet M&amp;R Station</b>					
NSA 1	325 feet (SSE)	59.7	41.7	59.8	0.1
<b>Proposed West Roxbury M&amp;R Station</b>					
NSA 1	100 feet (SW)	52.1	48.5	53.7	1.6
<sup>a</sup> Current ambient levels based on noise surveys as described in table 4.11.2-1.					

In addition to the operational noise discussed above, there would also be blowdown events during which the pipeline would generate noise for short periods of time (e.g., 1 to 5 minutes). Algonquin has indicated that these potential blowdown events would be associated with each of the new compressor units, which would each be outfitted with a blowdown silencer to ensure that the noise attributable to these blowdown events would be 60 dBA at a distance of 300 feet. Given the non-routine nature and short-term duration of these blowdown event, we do not believe that they will be a significant contributor to operational noise from the Project.

We received comments on the draft EIS related to vibration at the Brookfield Compressor Station, which is part of the Iroquois Gas Transmission's pipeline system. We are aware of the vibration issue at this station through an operational complaint addressed through the FERC's dispute resolution service helpline. The gas for the proposed project is 100 percent subscribed for local distribution companies and municipalities along the Algonquin system. The additional volumes are not intended for transport along the Iroquois system. Therefore, the Brookfield Compressor Station would not experience a change in volume or operation as a result of this Project. Further, each of the compressor stations proposed to be modified as part of the proposed Project are existing stations that do not currently result in perceptible vibration at nearby receptors. FERC regulations require that all modifications to existing compressor stations cannot result in a perceptible increase in vibration at nearby receptors.

Based on the analyses conducted, mitigation measures proposed, and our additional recommendations, we believe that the Project would not result in significant noise impacts on residents, and the surrounding communities.

## **4.12 RELIABILITY AND SAFETY**

The transportation of natural gas by pipeline involves some incremental risk to the public due to the potential for accidental release of natural gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. The natural gas in Algonquin's system may contain a chemical odorant that produces the familiar "natural gas smell."

Methane has an auto-ignition temperature of 1,000 °F and is flammable at concentrations between 5 and 15 percent in the air. Unconfined mixtures of methane in the air are not explosive; however, it may ignite and burn if there is an ignition source. A flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

### **4.12.1 Safety Standards**

PHMSA is mandated to provide pipeline safety under 49 USC Chapter 601. The OPS administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards that set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve the required safety standard. PHMSA ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the federal, state, and local level. PHMSA provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the federal standards. A state may also act as PHMSA's agent to inspect interstate facilities within its boundaries; however, PHMSA is responsible for enforcement actions. For the AIM Project, New York and Connecticut are interstate agents that have been delegated authority to inspect interstate natural gas pipeline facilities. OPS federal inspectors perform inspections on interstate natural gas pipeline facilities in Massachusetts and Rhode Island.

PHMSA pipeline standards are published in 49 CFR Parts 190–199. Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues. Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993 between PHMSA and the FERC, PHMSA has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. Alternatively, an applicant must certify that it has been granted a waiver of the requirements of the safety standards by PHMSA in accordance with section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert PHMSA. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipelines under the Commission's jurisdiction.



The FERC also participates as a member of PHMSA's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

The pipeline and aboveground facilities associated with the AIM Project would be designed, constructed, operated, and maintained in accordance with or to exceed PHMSA's Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. PHMSA specifies material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion.

We received comments regarding the siting of a high-pressure pipeline in urban or developed settings in close proximity to facilities such as schools, residential areas, and hospitals. PHMSA defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class locations unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined below:

- Class 1 – location with 10 or fewer buildings intended for human occupancy;
- Class 2 – location with more than 10 but less than 46 buildings intended for human occupancy;
- Class 3 – location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12-month period; and
- Class 4 – location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. For instance, pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil or 24 inches in consolidated rock.

Class locations also specify the maximum distance to sectionalized block valves (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures; hydrostatic test pressures; MAOP; inspection and testing of welds; and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. A summary of class locations based on current population density along the proposed pipeline segments is provided in table 4.12.1-1.

During operation of the pipeline, if a subsequent increase in population density adjacent to the right-of-way results in a change in class location for the pipeline, Algonquin would reduce the MAOP or replace the segment with pipe of sufficient grade and wall thickness, if required, to comply with PHMSA's code of regulations for the new class location.

TABLE 4.12.1-1

## Area Classifications Along the AIM Project

Facility	County, State	Begin MP	End MP	Length (feet)	Class Location	
Replacement Pipeline						
Haverstraw to Stony Point Take-up and Relay	Rockland, NY	0.0	1.7	9,186	3	
		1.7	1.9	787	1	
		1.9	3.3	7,334	3	
Stony Point to Yorktown Take- up and Relay	Rockland, NY	0.0	0.9	4,800	3	
		0.9	1.3	2,270	1	
		1.3	3.2	9,988	3	
	Westchester, NY	3.2	3.5	1,542	1	
		3.5	3.9	1,983	1	
		3.9	4.6	3,837	2	
		4.6	4.7	244	3	
		4.7	5.0	1,776	1	
		5.0	6.8	9,567	3	
		6.8	8.0	6,148	1	
		8.0	10.9	15,335	3	
		10.9	11.2	1,708	2	
11.2	12.3	5,755	1			
Southeast to MLV 19 Take-up and Relay	Putnam, NY	0.0	0.1	792	1	
	Fairfield, CT	0.1	0.9	4,105	3	
		0.9	1.0	724	1	
		1.0	2.6	8,205	3	
		2.6	2.9	1,585	1	
E-1 System Lateral Take-up and Relay	New London, CT	2.9	4.5	8,354	3	
		0.0	0.5	2,579	2	
		0.5	8.5	42,408	1	
		8.5	8.9	2,123	3	
		8.9	9.1	938	1	
	Loop Extension					
Line-36A Loop Extension	Middlesex, CT	0.0	0.7	3,586	1	
		0.7	0.9	906	3	
		0.9	1.0	1,034	1	
		1.0	1.5	2,328	2	
		1.5	1.8	1,372	1	
	Hartford, CT	1.8	2.0	1,320	1	
E-1 System Lateral Loop Extension	New London, CT	0.0	0.3	1,814	3	
			0.3	1.2	4,412	1
			1.2	1.3	902	2
New Pipeline <sup>a</sup>						
West Roxbury Lateral	Norfolk, MA	0.0	0.2	900	3	
		0.2	0.4	1,300	4	
		0.4	0.6	1,100	3	
		0.6	1.2	19,600	4	
		1.2	3.4	11,880	3	
	Suffolk, MA	3.4	5.1	8,184	3	
<sup>a</sup> The length of the pipeline does not match the mileposting system. This is because several route modifications were incorporated into the proposed route after the mileposting system was established. This specifically affects the West Roxbury Lateral where the changes resulted in an overall decrease in total pipeline length. The changes to the other segments did not result in an overall change in the segment lengths.						

Several commentors believed that the Buchanan-Verplanck Elementary School should be considered a Class 4 area, with corresponding pipeline design requirements. Based on PHMSA's regulations, the area surrounding the pipeline that includes the Buchanan-Verplanck Elementary School does not meet the qualification criteria for a Class 4 designation and would be classified as a Class 3 location. However, Algonquin has agreed to enhanced mitigation measures for construction near the IPEC, which would also extend to the segment of pipeline near Buchanan-Verplanck Elementary School. These measures include constructing this segment of the pipeline to exceed the most stringent Class 4 design requirements (see section 4.12.3 for additional discussion of the mitigation measures and impacts on the Buchanan-Verplanck Elementary School).

In compliance with Part 192, Algonquin would be required to implement several safety measures during construction and operation of Project facilities. The piping, fittings, and other components containing natural gas under pressure must be designed with a significant margin of safety factor above normal operating parameters. To ensure that the maximum pressure is never exceeded, the system must be equipped with safety relief valves set to release gas that would maintain pressures below the MAOP. The relief valves must be tested periodically for proper operation and set point, and repaired or replaced as required. Also, gas vented to the atmosphere must be directed away from any potential sources of ignition.

PHMSA's pipeline safety regulations require natural gas transmission operators to develop and follow a written integrity management program that contains all of the elements described in 192.911 and addresses the risks on each covered transmission pipeline segment. The rule establishes an integrity management program, which applies to all high consequence areas (HCA).

PHMSA published rules that define HCAs where a gas pipeline accident could do considerable harm to people and their property and requires an integrity management program to minimize the potential for an accident. This definition satisfies, in part, the Congressional mandate for PHMSA to prescribe standards that establish criteria for identifying each gas pipeline facility in a high-density population area.

The HCAs may be defined in one of two ways. In the first method, an HCA includes:

- current Class 3 and 4 locations;
- any area in Class 1 or 2 locations where the potential impact radius<sup>10</sup> is greater than 660 feet and there are 20 or more buildings intended for human occupancy within the potential impact circle<sup>11</sup>; or
- any area in Class 1 or 2 locations where the potential impact circle includes an identified site.

An identified site is an outside area or open structure that is occupied by 20 or more persons on at least 50 days in any 12-month period; a building that is occupied by 20 or more persons on at least 5 days a week for any 10 weeks in any 12-month period; or a facility that is occupied by persons who are confined, are of impaired mobility, or would be difficult to evacuate (including hospitals, schools, and nursing homes).

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<sup>10</sup> The potential impact radius means the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. The potential impact radius is calculated as the product of 0.69 and the square root of the MAOP of the pipeline (in pounds per square inch) multiplied by the pipeline diameter in inches.

<sup>11</sup> The potential impact circle is a circle of radius equal to the potential impact radius.

In the second method, an HCA includes any area within a potential impact circle that contains:

- 20 or more buildings intended for human occupancy; or
- an identified site.

Once a pipeline operator has determined the HCAs along its pipeline, it must apply the elements of its integrity management program to those segments of the pipeline within HCAs. PHMSA's regulations specify the requirements for the integrity management plan at section 192.911. The HCAs have been determined based on the relationship of the pipeline centerline to other nearby structures and identified sites. Table 4.12.1-2 lists the HCAs by milepost that would be crossed by the pipeline facilities.

TABLE 4.12.1-2				
Location of High Consequence Areas Along the Pipeline Facilities for the AIM Project <sup>a</sup>				
Facility	County, State	Begin MP	End MP	HCA Length (feet)
<b>Replacement Pipeline</b>				
Haverstraw to Stony Point Take-up and Relay	Rockland, NY	0.0	0.0	36
		0.0	0.1	725
		0.3	1.3	5,306
		2.2	2.8	3,398
Stony Point to Yorktown Take-up and Relay	Rockland, NY	1.0	3.5	13,393
	Westchester, NY	3.5	3.6	317
		3.8	4.2	2,580
		5.9	8.5	13,704
		9.7	10.4	3,450
Southeast to MLV 19 Take-up and Relay	Fairfield, CT	11.1	12.0	4,633
		0.1	1.0	4,641
		1.0	2.8	9,866
		3.0	3.4	1,817
		4.3	4.4	800
E-1 System Lateral Take-up and Relay	New London, CT	8.5	8.6	372
		8.6	8.7	438
		8.9	9.0	860
<b>Loop Extension <sup>b</sup></b>				
Line-36A Loop Extension	Middlesex, CT	0.5	1.0	2,722
<b>New Pipeline <sup>c</sup></b>				
West Roxbury Lateral	Norfolk, MA	0.0	3.4	18,163
	Suffolk, MA	3.4	5.1	8,184
<sup>a</sup> HCA designations are based on existing Algonquin pipeline facilities and the most recent annual review of HCAs as defined in Algonquin's integrity management program.				
<sup>b</sup> No HCAs would be located along the E-1 System Lateral Loop.				
<sup>c</sup> The length of the pipeline does not match the mileposting system. This is because several route modifications were incorporated into the proposed route after the mileposting system was established. This specifically affects the West Roxbury Lateral where the changes resulted in an overall decrease in total pipeline length. The changes to the other segments did not result in an overall change in the segment lengths.				

The pipeline integrity management rule for HCAs requires inspection of the pipeline every 7 years. Algonquin has implemented a comprehensive integrity management program that meets, and in many cases exceeds, these regulations. While the pipeline integrity management regulations apply only to HCAs, Algonquin would continue to implement the same rigorous practices across its entire pipeline system. Key elements of Algonquin's integrity management program include data gathering, risk assessment, integrity assessments, response and remediation, and preventative and mitigative measures as described below.

Data Gathering – In order to properly identify integrity risks and potential consequences, data is gathered from a number of sources, including:

- original construction records;
- pipeline alignment sheet records;
- personnel interviews;
- quadrangle USGS maps;
- digital elevation models;
- historical data;
- database searches;
- leak and incident data/reports;
- operating characteristics;
- corrosion monitoring;
- cathodic protection surveys;
- subject matter experts;
- one-call notices; and
- aerial photography.

Risk Assessment – Each year Algonquin performs a detailed risk analysis for its entire pipeline system to identify potential integrity threats to the pipeline and potential consequences in the event of a pipeline failure. This risk analysis, which allows Algonquin to prioritize integrity management activities, such as integrity assessments and additional prevention measures. The risk assessment is performed by subject matter experts using modern risk management tools and techniques to assure the risk assessment process provides an accurate determination of pipeline risks.

Integrity Assessments – Integrity assessments are prioritized based on the risk assessment, and are conducted to find pipeline defects before they could become a threat. The integrity assessment method for each pipeline segment is selected based on the types of potential integrity threats applicable to that segment. The integrity assessment methods could include:

- In-Line Inspection – conducted using an internal inspection tool (commonly referred to as a “smart pig”) that is capable of identifying and classifying pipe defects, including metal loss, dents, gouges, and other types of defects. The smart pig is inserted into the pipeline and is typically pushed by the flow of natural gas in the pipeline.
- Direct Assessment – an assessment method that uses a systematic approach to identify potential defects through data review, indirect assessments, and targeted hands-on inspections.
- Pressure Testing – an assessment method where the pipeline is filled with an inert substance, typically water, and is tested to a pressure that is well above the normal

operating pressure to validate the strength of the pipe and identify any smaller defects before they become a threat.

Response and Remediation – Pipeline defects identified by the integrity assessments are scheduled for field investigation and repair, if required, in accordance with the integrity management regulations and industry standards and best practices. Algonquin schedules and conducts investigations and repairs for any potential defects that exceed specified thresholds. This is done regardless of whether or not the pipeline is located in a designated HCA.

Preventive and Mitigative Measures – Preventive measures include design specifications, selection of suitable construction materials, development and selection of welding procedures, pipe coatings, and cathodic protection systems. Additionally, manufacturing controls would be used to promote high-quality installation of the pipeline and to limit operating stress. During the installation phase, all welders and radiographic technicians performing work on the facilities would be required to take and pass a qualification test. Qualified oversight inspection staff would be used to monitor the installation of the facilities.

After construction and as required by PHMSA's regulations, the pipeline facilities would be marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would indicate the presence of the pipeline and provide a telephone number where a company representative could be reached in the event of an emergency or before any excavation in the area of the pipeline by a third party. Algonquin participates in the "Call Before You Dig" and "One Call" programs and other related pre-excavation notification organizations in the states in which they operate. In addition, if there is excavation occurring near one of Algonquin's pipelines, operational personnel would be on site during excavation activities to ensure there is no risk of damage to the pipeline.

The pipeline would be patrolled on a routine basis, and personnel well qualified to perform both emergency and routine maintenance on interstate pipeline facilities would handle emergencies and maintenance related to:

- erosion and wash-outs along the right-of-way;
- settling, undermining, or degradation of a repaired ditch line in streets or parking lots;
- performance of water control devices, such as diversions;
- condition of banks at stream and river crossings;
- third-party activity along the pipeline right-of-way; and
- any other conditions that could endanger the pipeline.

PHMSA prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities to minimize the hazards in a natural gas pipeline emergency. Key elements of Algonquin's Emergency Plan (under Part 192.615) include:

- receiving, identifying, and classifying emergency events, such as gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- employing an emergency system shutdown and safely restoring service;

- making personnel, equipment, tools, and materials available at the scene of an emergency; and
- protecting people first and then property, and making them safe from actual or potential hazards, including evacuating individuals and rerouting traffic as necessary to avoid any area that is deemed to be unsafe.

We received comments during public scoping regarding emergency response procedures and employee training at the Southeast and Stony Point Compressor Stations. Algonquin's Cromwell, Connecticut Area Office maintains the Emergency Response Plan for the Southeast Compressor Station, and the South Plainfield, New Jersey Area Office maintains the Emergency Response Plan for the Stony Point Compressor Station. The Emergency Response Plans for each of these stations include:

- details on how to identify and classify emergencies;
- notification and emergency response procedures for events including detection of gas, fire, explosion, natural disaster, or a bomb threat and emergency shutdown steps;
- phone numbers for Spectra emergency response personnel, first responders (fire departments and law enforcement), and emergency response contractors;
- operating maps; and
- directions to each of the facilities.

The Emergency Response Plans are reviewed annually. All applicable personnel receive annual training on the Emergency Response Plans, and the area offices conduct emergency response exercises on an annual basis. Additionally, Algonquin conducts periodic training sessions to review operating and emergency procedures with their operations staff.

Algonquin's Gas Control Center monitors system pressures, flows, and customer deliveries on its entire system. The center is staffed 24 hours a day, 7 days a week, and 365 days a year from Houston, Texas. Algonquin's AIM Project facilities would also be equipped with remote control shutoff valves. In the event of an emergency, the Gas Control Center would send a command signal to the remote control valves to initiate the closure of the valves. The remote control valves are capable of closing quickly to allow for a section of pipeline to be isolated from the rest of the system.

We received a comment concerning the potential for Algonquin's monitoring and data acquisition systems to be vulnerable to computer "worms," such as the Stuxnet Computer worm. Algonquin stated that its controls are tested on a continuous basis and that it has fully staffed Information Technology and Corporate Security groups dedicated to the protection and security of their pipeline control systems. Additionally, its staff is certified and trained through the Department of Homeland Security and works closely with local, state, and federal agencies reviewing and developing safeguards against cyber threats.

We also received comments regarding operational checks and leak detection. Algonquin's operating personnel would patrol the right-of-way along the new and existing pipeline facilities on a weekly basis. Algonquin would also conduct annual leak detection surveys of its pipeline facilities to identify any potential leaks. These surveys are instrumental in early detection of leaks and can reduce the likelihood for pipeline failure.

PHMSA requires that each operator establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to the appropriate public officials. Algonquin would maintain a liaison with public authorities and local utilities in all locations along the pipeline system. A current list of those to be contacted would be maintained by the Transmission Area Managers at the South Plainfield (New Jersey), Cromwell (Connecticut), and Westwood (Massachusetts) Area Offices. Algonquin would provide the appropriate training to local emergency service personnel before the pipeline is placed in service.

We received several comments during the scoping period regarding the tax burden on local emergency services in the event of a pipeline incident. Algonquin would not necessarily compensate the municipalities for any public service assistance that might be required to respond to an incident; however, Algonquin would pay taxes (see section 4.9.8), which may be used to offset any required municipal expenses.

#### **4.12.2 Pipeline Accident Data**

PHMSA requires all operators of natural gas transmission pipelines to notify PHMSA of any significant incident and to submit a report within 20 days. Significant incidents are defined as any leaks that:

- cause a death or personal injury requiring hospitalization; or
- involve property damage of more than \$50,000 in 1984 dollars.<sup>12</sup>

During the 20-year period from 1994 through 2013, a total of 1,237 significant incidents were reported on the more than 300,000 total miles of natural gas transmission pipelines nationwide.

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 4.12.2-1 provides a nationwide distribution of the causal factors as well as the number of each incident by cause. The dominant causes of pipeline incidents are corrosion and pipeline material, weld or equipment failure constituting 48.2 percent of all significant incidents. The pipelines included in the data set in table 4.12.2-1 vary widely in terms of age, diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

Table 4.12.2-2 provides a distribution of state-specific significant incident data for the past 20 years where the Project would be located. This data shows that over the past 20 years there have been a total of 13 incidents in New York, 0 in Connecticut and Rhode Island, and 2 in Massachusetts. Two of these incidents occurred in 2013 among all four states.

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<sup>12</sup> \$50,000 in 1984 dollars is approximately \$115,000 as of March 2014 (CPI, Bureau of Labor Statistics, <http://ftp.bls.gov/pub/special.requests/cpi/cpiat.txt>, February 2014).



TABLE 4.12.2-1		
Natural Gas Transmission Pipeline Significant Incidents by Cause (1994–2013) <sup>a</sup>		
Cause	Number of Incidents	Percentage
Corrosion	292	23.6
Excavation <sup>b</sup>	211	17.0
Pipeline Material, Weld or Equipment Failure	304	24.6
Natural Force Damage	142	11.5
Outside Forces <sup>c</sup>	74	6.0
Incorrect Operation	33	2.7
All Other Causes <sup>d</sup>	181	14.6
TOTAL	1,237	--
<sup>a</sup> All data gathered from PHMSA Significant Incident files, March 14, 2014 ( <a href="http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html">http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html</a> ). <sup>b</sup> Includes third-party damage. <sup>c</sup> Fire, explosion, vehicle damage, previous damage, intentional damage. <sup>d</sup> Miscellaneous causes or unknown causes.		

TABLE 4.12.2-2		
Natural Gas Transmission Pipeline Significant Incidents by State (1994–2013) <sup>a</sup>		
State	Number of Incidents	Cause(s)
New York	13	Corrosion; Pipeline Material, Weld or Equipment Failure; Third-party Excavation Damage; Natural Force Damage; Miscellaneous
Connecticut	0	NA
Massachusetts	2	Third-party Excavation Damage
Rhode Island	0	NA
<b>TOTAL</b>	<b>15</b>	
<sup>a</sup> All data gathered from PHMSA Significant Incident files, December 15, 2014 ( <a href="http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html">http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html</a> ). NA = Not Applicable		

The frequency of significant incidents is strongly dependent on pipeline age. Older pipelines have a higher frequency of corrosion incidents and material failure, since corrosion and pipeline stress/strain is a time-dependent process. The use of both an external protective coating and a cathodic protection system, <sup>13</sup> required on all pipelines installed after July 1971, significantly reduces the corrosion rate compared to unprotected or partially protected pipe.

As shown in table 4.12.2-1, outside force, excavation, and natural forces are the cause in 34.5 percent of significant pipeline incidents. These result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage. Table 4.12.2-3 provides a breakdown of outside force incidents by cause.

<sup>13</sup> Cathodic protection is a technique to reduce corrosion (rust) of the natural gas pipeline that includes the use of an induced current or a sacrificial anode (like zinc) that corrodes at faster rate to reduce corrosion.

TABLE 4.12.2-3		
Outside Forces Incidents by Cause (1994–2013) <sup>a</sup>		
Cause	Number of Incidents	Percent of all Incidents
Third-party excavation damage	176	14.2
Operator excavation damage	25	2.0
Unspecified equipment damage/Previous damage	10	0.8
Heavy Rain/Floods	72	5.8
Earth Movement	35	2.8
Lightning/Temperature/High Winds	21	1.7
Unspecified Natural Force	14	1.1
Vehicle (not engaged with excavation)	45	3.6
Fire/Explosion	8	0.6
Previous mechanical damage	5	0.4
Fishing or maritime activity	7	0.6
Intentional damage	1	0.1
Electrical arcing from other equipment/facility	1	0.1
Unspecified outside force	7	0.4
TOTAL	427	--
<sup>a</sup> Excavation, Outside Forces, and Natural Force Damage from table 4.12.2-1.		

Older pipelines have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller-diameter pipelines; which have a greater rate of outside forces incidents. Small diameter pipelines are more easily crushed or broken by mechanical equipment or earth movement.

Since 1982, operators have been required to participate in "One Call" public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (*e.g.*, oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts.

We received scoping comments regarding Spectra's safety record. Spectra's reportable incident and leak rates are significantly lower than industry averages, as shown in table 4.12.2-4. In addition, pipeline operator compliance and incident history is publically available on the PHMSA website at [www.phmsa.dot.gov/pipeline](http://www.phmsa.dot.gov/pipeline).

TABLE 4.12.2-4		
Average 5-Year Leak and Incident Rates for Spectra and All U.S. Natural Gas Transmission Lines		
Category	Spectra Energy Pipelines (per 1,000 miles/year)	All U.S. Gas Transmission Lines (per 1,000 miles/year)
Onshore Incidents	0.16	0.30
Leaks	0.54	1.97

#### 4.12.3 Impact on Public Safety

Algonquin would implement various public safety measures during construction in residential and commercial areas, including but not limited to:

- fencing the construction work area boundary to ensure equipment, materials, and spoil remain in the construction right-of-way and that the public is excluded from hazardous areas;
- ensuring piping is welded and installed as quickly as reasonably possible consistent with prudent pipeline construction practices to minimize the duration of construction within a neighborhood;
- backfilling the trench as soon as the pipe is laid or temporarily installing a steel plate over the open trench; and
- completing final cleanup and installation of permanent erosion control measures within 10 days after the trench is backfilled, weather conditions permitting.

Along the West Roxbury Lateral, the pipeline would primarily be placed within streets in the vicinity of residential and commercial areas. Algonquin would use the in-street construction method to install the pipeline within roadways (see section 2.3.1.2). The work area would be isolated from road and pedestrian traffic, and traffic controls would be used to allow traffic to bypass the work area. No trenches would be left open overnight. With the exception of the end of the pipe, which would be left exposed within the trench, the pipe trench would be backfilled at the end of the day, and the open trench containing the exposed ends of the pipe would be plated. The work would be accomplished so that emergency vehicles would be able to pass and homeowners would be able to access their driveways. Algonquin has developed an acceptable Traffic Management Plan for the West Roxbury Lateral as well as acceptable site-specific residential construction plans for residences within 50 feet of the construction right-of-way (see sections 4.9.5 and 4.8.3, respectively).

We received several comments regarding the proximity of the Project to high-voltage power lines. It is not uncommon for natural gas pipeline facilities to parallel existing utility rights-of-ways, including electric transmission rights-of-way. Algonquin would comply with all federal, state, and local regulations that apply to construction with regard to structures and underground utilities. Algonquin has conducted surveys and collected information on the location and size of existing power line structures within the proposed right-of-way corridors, tower footing locations and dimensions, and wire heights (lowest point between towers). Algonquin would design or modify its construction technique on the AIM Project with sufficient offsets to eliminate the risk of heavy construction equipment interfering with overhead high-voltage electric transmission lines during construction and operation. Where possible, Algonquin would offset its pipeline trench by 50 feet to avoid any potential damage to electric transmission towers; and in those areas that this offset could not be achieved, the construction technique would be modified. Algonquin would use a licensed blasting engineer and would follow a Project-specific Rock Removal Plan that includes blasting procedures (see section 4.1.6) to avoid damage to overhead electric transmission lines and structures from blasting.

To address potential effects on the pipeline from potential lightning strikes to nearby electric transmission towers, Algonquin would consult with an engineer that specializes in developing alternating current (AC) mitigation systems for pipeline utility companies. An AC mitigation system would be designed and installed to mitigate the steady state induced AC on the pipeline and deal with any fault

current should one occur. Typically lightning arrestors along with decoupling devices would be employed on the pipeline to protect against any electrical surges.

We have also received numerous comments expressing safety concerns about potential interactions between Algonquin's proposed pipeline facilities and the WPP electric transmission line. Algonquin and WPP have corresponded and met regarding the two projects, and plan to share design drawings. Algonquin has committed to conducting an alternating current/direct current (AC/DC) interference study and incorporating field surveys and comprehensive modeling to identify potential adverse effects on the pipeline from stray currents and from inductive, conductive, and coupling AC/DC effects from nearby AC/DC utilities. The study's purpose is to indicate specific design measures necessary to mitigate electrical interaction between the pipeline and electric transmission systems. Potential mitigation measures for AC/DC interference could include maximum separation distance, parallel/point mitigation utilizing anodes, potentially controlled impressed current cathodic protection systems, or other measures based on engineering judgment. A properly designed natural gas pipeline and electric transmission line running parallel to each other, even at close distances, would not result in any cumulative operational or public safety hazards. WPP's transmission line, which is a self-contained, buried cable system with associated automatic monitoring and near-instantaneous protection systems, would avoid any operational impacts with the proposed pipeline. The WPP line would also employ a metallic ground sheath so that possible electrical arcing or faults would be self-contained. WPP has committed to installing its cable in accordance with Algonquin's requirements at any point where it would cross the pipeline. Although we do not anticipate any significant issues, to ensure that safety concerns about potential interactions are adequately addressed, **we recommend that:**

- **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment, Algonquin should file with the Secretary its final AC/DC interference study associated with the West Point Transmission Project, documentation of all consultations with WPP, and any additional mitigation measures to address safety-related issues.**

Additionally, we received scoping comments and comments on the draft EIS from individuals as well as Entergy concerning the safety of the Project and its proximity to the IPEC facility. Three existing pipelines (24-inch-diameter Northline, 30-inch-diameter L30B pipeline, and 24-inch-diameter Southline) currently cross the Hudson River within Algonquin's mainline right-of-way and are immediately adjacent to the IPEC-protected security barrier. For the Stony Point to Yorktown Take-up and Relay segment of the proposed Project, Algonquin has identified as its proposed route an alternate crossing location of the Hudson River that is located approximately 0.5 mile south of the three existing pipelines. While the proposed route would still cross a portion of IPEC land, it would be about 2,370 feet from the IPEC-protected security barrier around the main facility sites. Land uses between the proposed route and the IPEC-protected security barrier include commercial and industrial. Algonquin would work with Entergy on any requirements for the storage of construction equipment on these parcels when negotiating easements with Entergy and Con Edison for construction of the proposed pipeline. Algonquin has also shared its operation and maintenance procedures with Entergy and continues to consult with Entergy regarding the use of Entergy-owned or leased land along the proposed route.

Entergy also commented about the potential impacts of the new 42-inch-diameter pipeline crossing the existing pipelines. To minimize potential impacts on the existing line, Algonquin would locate the existing pipeline using above-grade visual cues, electronic pipe locators, probing, and soft digging methods. Once the pipeline is located and identified, pipe stress calculations could be completed for equipment crossings and surface loads. If necessary, Algonquin would provide additional cover; install timber mats, steel plating, or temporary air bridging; utilize a combination of these; or avoid the

crossing in order to minimize or avoid impacts on existing utilities. During construction, Algonquin would use soft digging methods to excavate utility lines. Excavator buckets without teeth or side cutters would be used, and lines could be shielded with rock shield or plywood. Utility lines would be supported from below or by a beam installed across the top of the trench. For highly sensitive lines, Algonquin would develop a site-specific work plan for working near the utility.

Entergy commented about concerns on the purging of gas from the existing 26-inch-diameter pipeline, Algonquin would not have any purging operations on IPEC property. Blowing down the existing 26-inch-diameter pipeline would occur either upstream or downstream of the IPEC facility. A written procedure for blow-down of the pipeline would be drafted in accordance with Algonquin's standard operation procedures.

Entergy also commented on blasting and HDD inadvertent releases with regard to the IPEC facility. The proposed route would not be located within or adjacent to the main IPEC facilities; therefore, no blasting would occur within or near the IPEC-secured zone. If blasting would be required along the proposed route, Algonquin would first consult with Entergy. Blasting would be conducted in accordance with Algonquin's Rock Removal Plan (see appendix E). The Hudson River HDD would be located about 0.5 mile south of the protected security barrier surrounding the IPEC facility. It is not anticipated that inadvertent releases of drilling fluids would affect IPEC property, and HDD construction equipment would not be located on or adjacent to the IPEC facility.

With regard to Entergy's comment regarding how Algonquin intends to prevent overpressure of the downstream pipeline when adding additional horsepower at existing compressor stations, overpressure protection controls are established at compressor stations on Algonquin's transmission lines. These controls have been in place for the 26- and 30-inch-diameter pipelines at the Stony Point Compressor Station. The new 42-inch-diameter pipeline segment would have the same overpressure protection measures to ensure safety of the pipeline. The pressure controls and overpressure devices are reliable and stringent, and the accuracy of set points is verified at periodic time intervals in accordance with PHMSA regulations. Maintenance records of the pressure controls and overpressure devices are audited by internal teams as well as PHMSA auditors to ensure compliance.

Given the distance from the IPEC generating facilities and the avoidance and mitigation measures described above, the proposed route should not pose any new safety hazards to the IPEC facility. On August 21, 2014, after consultations between Entergy and Algonquin, Entergy filed with the NRC its Safety Evaluation for the AIM Project. The Safety Evaluation incorporates additional design and installation enhancements along approximately 3,935 feet of the AIM Project pipeline where it would lie closest to the IPEC facility (i.e., 0.5 mile from IPEC's security barrier). These measures include:

- using internally coated 0.720 inch X-70 API 5L line pipe that exceeds the most stringent Class 4 requirements set by the U.S. Department of Transportation (even though this area is predominantly Class 3);
- installing two parallel sets of fiber-reinforced concrete slabs (3 feet wide by 8 feet long by 6 inch thick) over the pipeline that would act as a physical barrier over the buried pipe;
- installing yellow warning tape above and below the concrete slabs;
- burying the pipeline to a minimum depth of 4 feet from the top of the pipeline (and an additional foot deeper when crossing Broadway); and

- providing thicker external corrosion protection, including an abrasive resistant overlay, and internal coating of the pipeline. In addition, no blasting for rock removal would be allowed in the region of the enhanced design.

Algonquin would extend these measures to the entire area between MPs 4.6 and 5.3. Algonquin would also maintain traffic flow and access to the IPEC facility during construction. A Direct Current Voltage Gradient or equivalent survey would be undertaken to check coating integrity following pipe installation and partial backfill, and all field welds along the enhanced pipeline section would undergo Non-Destructive Examination radiography.

In its Safety Evaluation, Entergy concluded that, “based on the proposed routing of the 42-inch-diameter pipeline further from safety related equipment at IPEC, and accounting for the substantial design and installation enhancements agreed to by [Algonquin], the proposed AIM Project poses no increased risks to IPEC and there is no significant reduction in the margin of safety. Accordingly, as documented in its 10 Code of Federal Regulations (CFR) 50.59 Safety Evaluation, Entergy has concluded that the change in the design basis external hazards analysis associated with the proposed AIM Project does not require prior NRC approval” (Entergy, 2014).

The NRC has reviewed the site hazards analysis performed by Entergy and has performed an independent confirmatory analysis of the blast analysis as well. The NRC issued its findings in a report dated November 7, 2014. The NRC’s analysis did not include factoring in the additional pipeline design measures identified by Entergy and committed to by Algonquin and assumed a pipeline catastrophic failure. The review covered everything within the Security Owner Controlled Area, which includes everything inside the outermost fenced area of the facility (including the area with the spent fuel rods). The NRC concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the facility (NRC, 2014b).

A related matter brought up by some commenters was the concern that a pipeline incident may affect the Buchanan Electric Substation, which connects power generated at the IPEC facility to the electric transmission system serving New York City and its environs. The segment of the AIM pipeline that passes nearest the Substation (approximate MP 5.0) lies within the segment that would be subject to the additional design and installation enhancements agreed to by Algonquin as part of Entergy’s Safety Evaluation for the IPEC. These measures would also serve to increase the margin of safety for the Buchanan Electric Substation.

We also received many comments regarding safety concerns for the Buchanan-Verplanck Elementary School, which is located adjacent to the Stony Point to Yorktown Take-up & Relay segment between MPs 4.9 and 5.0. The Project right-of-way and construction workspace would be about 450 feet from the school facility at its closest point, on property owned by Con Edison, which abuts the school property. The pipeline would lie in a low area separated from the school by a natural berm and a wooded area. Algonquin would utilize standard open cut construction in this area, and would not employ blasting to remove rock that may be encountered during excavation near the school. The enhanced mitigation measures that Algonquin has committed to with Entergy for construction of approximately 3,935 feet of pipeline near the IPEC (see above) would include the pipeline right-of-way crossing near the school property, and would serve to further increase the margin of safety for the school. This segment is also within a HCA, which brings it into Algonquin’s integrity management program, which is discussed in section 4.12.1.

Comments were also received asking about, or requesting, advance notifications of natural gas planned venting of gas (blowdowns), which are occasionally necessary during pipeline operations. Algonquin indicates that a planned blowdown is typically done in connection with scheduled maintenance activities at a compressor station. An unplanned blowdown is a rare event, but may be triggered automatically by pipeline system controls when an abnormal event is detected, which is a necessary safety feature of the system. Blowdowns pass through silencers rated at 55 dBA. All blowdowns must comply with relevant facility air permits, and are reported to state authorities pursuant to Title V air permit conditions. Algonquin provides advance notifications of any planned blowdown to local police and fire departments, along with the non-emergency 911 systems, and to residents in the immediate vicinity of the blowdown event. In Massachusetts, notification of a planned release is also provided to the MassDEP. Notifications for a planned release are typically made at least 1 week in advance. The same local entities are notified as soon as practicable after any unplanned blowdown. These notifications enable local authorities to answer any questions they may receive from nearby residents who may hear the blowdown. This practice is consistent with other pipeline companies operating in residential areas. Natural gas vented to the atmosphere from pipeline facility blowdowns does not pose a health risk.

We received numerous comments from residents who were concerned about the consequences of an explosion of a larger, 42-inch-diameter pipeline. The majority of this Project involves replacement of existing pipeline. However, table 4.12.3-1 presents the existing and future potential impact radius for each pipeline segment, calculated using the methodology defined by PHMSA's regulations. Although the transportation of natural gas via a pipeline involves some degree of risk to the public in the event of an accident and subsequent release of gas, it is also important to examine the probabilistic level of risks for pipeline-related events.

The service incidents data summarized in table 4.12.2-1 include pipeline failures of all magnitudes with widely varying consequences. Table 4.12.3-2 presents the average annual injuries and fatalities that occurred on natural gas transmission lines for the 5-year period between 2009 and 2013. The majority of fatalities from pipelines are due to local distribution pipelines not regulated by FERC. These are natural gas pipelines that distribute natural gas to homes and businesses after transportation through interstate natural gas transmission pipelines. In general, these distribution lines are smaller diameter pipes and/or plastic pipes that are more susceptible to damage. Local distribution systems do not have large rights-of-way and pipeline markers common to the FERC-regulated natural gas transmission pipelines.

The nationwide totals of accidental fatalities from various anthropogenic and natural hazards are listed in table 4.12.3-3 in order to provide a relative measure of the industry-wide safety of natural gas transmission pipelines. Direct comparisons between accident categories should be made cautiously, however, because individual exposures to hazards are not uniform among all categories. The data nonetheless indicate a low risk of death due to incidents involving natural gas transmission pipelines compared to the other categories. Furthermore, the fatality rate is much lower than the fatalities from natural hazards such as lightning, tornados, or floods.

TABLE 4.12.3-1					
Existing and Future Potential Impact Radius for the AIM Project					
Facility	County, State	Begin MP	End MP	Existing PIR (feet)	Future PIR (feet)
<b>Replacement Pipeline</b>					
Haverstraw to Stony Point Take-up and Relay	Rockland, NY	0.0	3.3	465.7	844.9
Stony Point to Yorktown Take-up and Relay <sup>a</sup>	Rockland, NY	0.0	2.6	465.7	844.9
	Rockland/Westchester, NY	2.6	5.5	NA	844.9
	Westchester, NY	5.5	12.3	465.7	844.9
Southeast to MLV 19 Take-up and Relay	Putnam, NY/Fairfield, CT	0.0	4.5	465.7	844.9
E-1 System Lateral Take-up and Relay	New London, CT	0.0	9.1	113.4	302.3
<b>Loop Extension <sup>b</sup></b>					
Line-36A Loop Extension	Middlesex/Hartford, CT	0.0	2.0	NA	724.2
E-1 System Lateral Loop Extension	New London, Ct	0.0	1.3	NA	226.8
<b>New Pipeline</b>					
West Roxbury Lateral	Norfolk/Suffolk, MA	0.0	5.1	NA	302.3
<sup>a</sup> The portion of this segment between MPs 4.6 and 5.3 would be subject to the additional design and installation enhancements agreed to by Algonquin as part of Entergy's Safety Evaluation for the IPEC (see discussion above). These additional measures would lessen the possibility of corrosion and third-party damage even further than for pipe without these additional measures.					
Notes: PIR = potential impact radius NA = Not Applicable. New pipeline segments or loops do not have an existing potential impact radius.					

TABLE 4.12.3-2		
Injuries and Fatalities – Natural Gas Transmission Pipelines		
Year	Injuries	Fatalities
2009	11	0
2010 <sup>a</sup>	61	10
2011	1	0
2012	7	0
2013	2	0
<sup>a</sup> All of the fatalities in 2010 were due to the Pacific Gas and Electric pipeline rupture and fire in San Bruno, California on September 9, 2010.		



TABLE 4.12.3-3

**Nationwide Accidental Deaths <sup>a</sup>**

<b>Type of Accident</b>	<b>Annual Number of Deaths</b>
All accidents	117,809
Motor Vehicle	45,343
Poisoning	23,618
Falls	19,656
Injury at work	5,113
Drowning	3,582
Fire, smoke inhalation, burns	3,197
Farming, fishing, and other forestry occupations <sup>b</sup>	279
Floods <sup>c</sup>	89
Lightning <sup>c</sup>	54
Tornado <sup>c</sup>	74
Natural gas distribution lines <sup>d</sup>	14
Natural gas transmission pipelines <sup>d</sup>	2

<sup>a</sup> All data, unless otherwise noted, reflects 2007 statistics from U.S. Census Bureau, Statistical Abstract of the United States: 2010 (129<sup>th</sup> Edition) Washington, DC, 2009 (<http://www.census.gov/statab>).

<sup>b</sup> Bureau of Labor Statistics, Census of Fatal Occupational Injuries, May 2, 2014, 10-year average (2003-2012). ([http://www.bls.gov/iif/oshwc/cfoi/all\\_worker.pdf](http://www.bls.gov/iif/oshwc/cfoi/all_worker.pdf))

<sup>c</sup> NOAA National Weather Service, Office of Climate, Water and Weather Services, 30 year average (1983-2012) (<http://www.weather.gov/om/hazstats.shtml>).

<sup>d</sup> PHMSA, 2014. Significant Incidents Summary Statistics: 1994 – 2013, 20-year average (<http://primis.phmsa.dot.gov/comm/reports/safety/PSI.html>).

The available data show that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. From 1994 to 2013, there were an average of 62 significant incidents, 10 injuries, and 2 fatalities per year. The number of significant incidents over the more than 303,000 miles of natural gas transmission lines indicates the risk is low for an incident at any given location. Further, the majority of the Project would replace existing, aged pipeline with new pipeline in the same location and would not increase the risk to the nearby public. For the small portion of the Project where looping or a new pipeline is proposed, based on these numbers, we conclude that the proposed AIM Project would represent a slight increase in risk to the nearby public.

#### 4.12.4 Terrorism

We received comments regarding concerns that the pipeline facilities could be used in a terrorist attack. Safety and security concerns have changed the way pipeline operators, as well as regulators, must consider terrorism, both in approving new projects and in operating existing facilities. The Department of Homeland Security is tasked with the mission of coordinating the efforts of all executive departments and agencies to detect, prepare for, prevent, protect against, respond to, and recover from terrorist attacks within the United States. The Commission, in cooperation with other federal agencies, industry trade groups, and interstate natural gas companies is working to improve pipeline security practices, strengthen communications within the industry and extend public outreach in an ongoing effort to secure pipeline infrastructure.

The Commission, like other federal agencies, is faced with a dilemma in how much information can be offered to the public, while still providing a significant level of protection to energy facilities. Consequently energy facility design plans and layout location information has been removed from its website to ensure that sensitive information is not readily available.

Algonquin stated that through its parent company, Spectra, it would continue to participate in various activities in close collaboration with the Department of Homeland Security's Transportation

Safety Administration (TSA) and key industry groups concerning security as part of the AIM Project. This would include:

- complying with the TSA's Pipeline Security Division's Security Guidelines;
- participating in monthly intelligence meetings with both the Department of Homeland Security's Intelligence Program and the TSA's Pipeline Security Division's monthly update conference calls;
- attending classified briefings with the Department of Homeland Security for the industry, annually, and as needed;
- chairing the Interstate Natural Gas Association of America Security Committee and participating in the American Gas Association Security Committee, as well as the Oil and Natural Gas Sector Coordinating Council's Pipeline Working Group;
- participating in the production of a new video, sponsored by TSA, aimed at training law enforcement officers to respond to security events at pipeline facilities;
- participating annually in TSA's International Pipeline Security Forum;
- reporting suspicious incidents to the Transportation Security Operations Center; and
- conducting major crisis management drills, at least annually, within the company.

Safety and security are important considerations in any action undertaken by the FERC. The likelihood of future acts of terrorism or sabotage occurring at or along the AIM Project facilities, or at any of the myriad natural gas pipeline or energy facilities throughout the United States, is unpredictable given the disparate motives and abilities of terrorist groups. Although being sensitive to the history of incidents in the Project area, the continuing need to construct facilities to support the future natural gas pipeline infrastructure is not diminished from the threat of any such future acts.

#### **4.13 CUMULATIVE IMPACTS**

In accordance with NEPA, we considered the cumulative impacts of the AIM Project and other projects or actions in the area. Cumulative impacts represent the incremental effects of the proposed action when added to other past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project may be minor, the additive or synergistic effects of multiple projects could be significant. The direct and indirect impacts of the AIM Project are discussed in other sections of this EIS.

The purpose of this analysis is to identify and describe cumulative impacts that would potentially result from implementation of the AIM Project. This cumulative impacts analysis uses an approach consistent with the methodology set forth in relevant guidance (CEQ, 1997b, 2005; EPA, 1999). Under these guidelines, inclusion of actions within the analysis is based on identifying commonalities of impacts from other actions to potential impacts that would result from the AIM Project. In order to avoid unnecessary discussions of insignificant impacts and projects, and to adequately address and accomplish the purposes of this analysis, the cumulative impacts analysis for the AIM Project was conducted using the following guidelines:

- Another project must impact a resource category potentially affected by the proposed Project. These projects are located in the same general area that would be directly affected by construction of the proposed Project. More geographically distant projects are not assessed because their impact would generally be localized and, therefore, would

not contribute significantly to cumulative impacts in the proposed AIM Project area. However, cumulative impacts on air quality and watersheds are considered on a broader, more regional basis.

- The distance into the past and future that other projects could cumulatively impact the area of the AIM Project is based on whether the impacts are short-term, long-term, or permanent. The majority of the impacts related to the AIM Project would occur during the construction phase. Algonquin proposes to place the AIM Project facilities into service by November 2016, and would seek approval to begin construction as soon as all necessary federal approvals can be obtained.
- Where a potential for cumulative impacts was indicated, those impacts were quantified to the extent practicable; however, in some cases, the potential impacts can only be described qualitatively (e.g. projects in the planning stages, contingent on economic conditions, availability of financing or the issuance of permits).

The criteria listed below define the AIM Project's region of influence, which is used in this cumulative impacts analysis to describe the general area for which the AIM Project could contribute to cumulative impacts. The region of influence varies depending on the resource being discussed. Specifically, for the various resources our conservative approach considered:

- Impacts on geology and soils, land use, residential areas, visual resources, cultural resources, and traffic by the AIM Project would be highly localized and, therefore, we evaluated other projects (e.g. residential development, small commercial development, small transportation projects) within 0.25 mile of the construction work areas for the AIM Project for cumulative impacts on these resources.
- The AIM Project pipeline segments are each less than 15 miles long and primarily utilize existing rights-of-way. Waterbody and wetland crossings, as well as impacts on groundwater, vegetation, and wildlife by the AIM Project would be localized and minimized. Therefore, we included cumulative impacts on these resources for other projects within the sub-watersheds crossed by the AIM Project.
- The AIM Project compressor stations would result in long-term impacts on air quality in various AQCRs. Therefore, other projects with the potential to result in long-term impacts on air quality (e.g. natural gas compressor stations or industrial facilities) within the AQCRs that would also be impacted by an AIM Project compressor station were considered.
- Long-term noise impacts from the AIM Project compressor stations would be localized to within one mile of each station. Therefore, we evaluated other projects that would result in long-term impacts on noise affecting the same NSAs as the AIM Project compressor stations.

The anticipated cumulative impacts of the AIM Project and these other actions are discussed below, as are pertinent mitigation measures. Table 4.13-1 lists present or reasonably foreseeable future projects or activities that may cumulatively or additively impact resources that would be affected by the construction and operation of the AIM Project.

TABLE 4.13-1

**Existing or Proposed Projects Evaluated for Potential Cumulative Impacts in Conjunction with the AIM Project**

Facility/Project	Description	Status	Location Relative to AIM Project	Resources Cumulatively Affected <sup>a</sup>
<b>REPLACEMENT PIPELINE</b>				
<b>Haverstraw to Stony Point Take-up and Relay</b>				
Second Ramapo to Rock Tavern 345 kV Line Project	Establish a second 345-kV transmission line from Con Edison's Ramapo 345-kV substation to the CH Rock Tavern 345-kV substation along Con Edison's existing right-of-way, using existing transmission towers, in Orange and Rockland Counties, New York.	In-service summer 2016	6.5 miles from MP 0.0 on the Haverstraw to Stony Point Take-up and Relay	None
Tappan Zee Bridge/Interstate 287 Corridor Project	A project that would relieve congestion in the Interstation 287 corridor between Suffern and Port Chester, New York.	Unknown	6.7 miles from MP 0.0 on Haverstraw to Stony Point Take-up and Relay	None
State Bicycle Route 9/Rockland Lake River Trail – Dunderburg Mountain Trailway Project	Reconstruction of a section of the State Bicycle Route 9/Dunderburg Mountain Greenway Trail in the towns of Stony Point and Clarkstown, New York.	Proposed construction 2015 to 2016	5.9 miles from MP 2.9 on the Haverstraw to Stony Point Take-up and Relay	GW, SW, WT, VG, WD
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include 1.2 miles of take-up and relay pipeline in Rockland County, New York.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Residential, Commercial, and Industrial Developments	Several planned residential, commercial, and/or industrial developments are proposed in the Project area (see table 4.8.3-1).	Various	Various	L, R, T, SW, GW, VG, WD, A, N
<b>Stony Point to Yorktown Take-up and Relay</b>				
Champlain Hudson Power Express Project	A 335-mile-long, 1,000-megawatt, high-voltage, direct-current transmission system from the Canadian border to the New York City area. The high-voltage, direct-current cables would be buried within several waterbodies including the Hudson River and located in several towns including Stony Point and Haverstraw.	Proposed construction 2015 to 2017	Crosses Stony Point to Yorktown Take-up and Relay at MP 3.3	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Haverstraw Water Supply Project	A water intake, intake pumping station, water treatment plant, and transmission and distribution mains to be located in the Town of Haverstraw. It would treat and deliver up to 7.5 million gallons per day of potable water for United Water New York Inc.'s Rockland County customers.	Unknown	2.9 miles from MP 0.5 on the Stony Point to Yorktown Take-up and Relay	GW, SW, WT, VG, WD
NRG Bowline Repowering Project	The Bowline Generating Station is located on the west bank of the Hudson River in West Haverstraw and would be repowered to modernize the State of New York's infrastructure.	Unknown	3.6 miles from MP 0.1 on the Stony Point to Yorktown Take-up and Relay	GW, SW, WT, VG, WD

TABLE 4.13-1 (cont'd)

**Existing or Proposed Projects Evaluated for Potential Cumulative Impacts in Conjunction with the AIM Project**

Facility/Project	Description	Status	Location Relative to AIM Project	Resources Cumulatively Affected
Boundless Energy NE, LLC proposed projects	Boundless Energy NE, LLC filed a Statement of Intent with the New York State Public Service Commission for four distinct transmission projects to strengthen the state's electric power grid.	In-service dates 2016 to 2018	17.7 miles from MP 1.9 on the Stony Point to Yorktown Take-up and Relay	None
Indian Point Nuclear Power Plant Cooling Water Intake Structure Project	Potential modification of existing cooling systems.	Unknown	0.7 mile from MP 5.5 on the Stony Point to Yorktown Take-up and Relay	GW, SW, A
West Point Transmission Project	Proposed construction of a new transmission line from Leeds Substation in Athens, New York to a substation located in the Town of Cortlandt, New York. The line would be buried in the Hudson River for 74 miles. The proposed converter station would be constructed on 3.8 acres of a 105-acre parcel owned by Con Edison also in the Town of Cortlandt, New York.	Proposed construction 2016	Crosses the Stony Point to Yorktown Take-up and Relay in the vicinity of MP 3.9	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
U.S. Gypsum Company dredging activities	On-going maintenance dredging (about once every 5 years) for U.S. Gypsum Company's existing access channel on the Hudson River to remove an accumulation of silt and other materials (about 90,000 cubic yards).	Ongoing	3.0 miles from MP 0.5 on the Stony Point to Yorktown Take-up and Relay	GW, SW, WD
Kmmkm, Ltd. Waste Transfer Facility Project	Construction of the new facility has been approved by the Planning Board of the City of Peekskill. Site is located along the railroad on Tract No. W-136; #WE-02550 and waste will be downloaded from trucks to railcars.	Unknown	1.7 miles from MP 5.9 on the Stony Point to Yorktown Take-up and Relay pipeline	GW, SW, WT, VG, WD
Bear Mountain Parkway/Route 6 Interchange, Bridge Replacement Project	Reconstruction of the Bear Mountain State Parkway interchange with Route 6 in the Towns of Cortlandt and Peekskill, New York.	Proposed construction 2020 to 2021	0.9 mile from MP 9.8 on the Stony Point to Yorktown Take-up and Relay pipeline	GW, SW, WT, VG, WD
East of Hudson Watershed Corporation stormwater and drainage facilities	Retrofit existing drainage systems and construct new facilities in Putnam and Westchester Counties, New York to reduce stormwater pollution (i.e., phosphorus) from state highways east of the Hudson River Watershed.	Proposed construction 2013 to 2015	Various locations	GW, SW, WT, VG, WD
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include 1.2 miles of take-up and relay pipeline in Rockland County, New York, and some portion of 6.8 miles of pipeline take-up and relay in Westchester County, New York.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD

TABLE 4.13-1 (cont'd)

**Existing or Proposed Projects Evaluated for Potential Cumulative Impacts in Conjunction with the AIM Project**

Facility/Project	Description	Status	Location Relative to AIM Project	Resources Cumulatively Affected
Residential, Commercial, and Industrial Developments	Several planned residential, commercial, and/or industrial developments are proposed in the Project area (see table 4.8.3-1).	Various	Various	L, R, T, SW, GW, VG, WD, A, N
<b>Southeast to MLV 19 Take-up and Relay</b>				
Prindle Lane Center Project	Interstate Business Center, LLC proposes to build a new business center, restaurant, and hotel on Prindle Lane in Danbury, Connecticut.	Proposed hotel in-service winter 2014/2015	0.2 mile from MP 1.6 on Southeast to MLV-19 Take-up and Relay	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include 4.2 miles of take-up and relay pipeline in Fairfield County, Connecticut, and some portion of 6.8 miles of pipeline take-up and relay in Putnam County, New York.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Residential, Commercial, and Industrial Developments	Several planned residential, commercial, and/or industrial developments are proposed in the Project area (see table 4.8.3-1).	Various	Various	L, R, T, SW, GW, VG, WD, A, N
<b>E-1 System Lateral Take-up and Relay</b>				
Replacement of bridge on State Road 616 over Bartlett Brook	Replacement of the bridge over Bartlett Brook between Roger Foot Road and Geer Road and additional roadwork in the Town of Lebanon, Connecticut.	Construction could be completed	5.2 miles from MP 4.7 on the E-1 System Lateral Take-up and Relay	None
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include 2.2 miles of take-up and relay pipeline in New London County, Connecticut.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Residential, Commercial, and Industrial Developments	Some planned residential, commercial, and/or industrial developments are proposed in the Project area (see table 4.8.3-1).	Various	Various	L, R, T, SW, GW, VG, WD, A, N
<b>LOOP EXTENSION</b>				
<b>Line-36A Loop Extension</b>				
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include some portion of 11.9 miles of new loop pipeline in Middlesex and Hartford Counties, Connecticut.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
<b>E-1 System Lateral Loop Extension</b>				
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include 2.2 miles of take-up and relay pipeline in New London County, Connecticut.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD

TABLE 4.13-1 (cont'd)

**Existing or Proposed Projects Evaluated for Potential Cumulative Impacts in Conjunction with the AIM Project**

Facility/Project	Description	Status	Location Relative to AIM Project	Resources Cumulatively Affected
<b>NEW PIPELINE</b>				
<b>West Roxbury Lateral</b>				
Dedham-Needham Route 128 Bridge Replacement Project	Replacement of Routes 109 and 135, Charles River, and Great Plain Avenue bridges and about 4 miles of Interstate 95/Route 128 roadway work in Norfolk County, Massachusetts.	Proposed construction 2010 to 2015	0.2 mile from MP 0.1 on the West Roxbury Lateral	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
5165 Washington Street Residential Development	Residential development in West Roxbury, Massachusetts that requires 29,700 square feet of land for a 27,000-square-foot building consisting of 20 residential units in a 3-story structure and 32 parking spaces.	Unknown	0.05 mile from MP 3.8 on the West Roxbury Lateral	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Interstate 95/University Avenue Interchange Improvements	Massachusetts Department of Transportation plans to reconfigure the Interstate 95/Interstate 93 interchange at University Avenue.	Unknown	1.5 miles from MP 0.2 on the West Roxbury Lateral	None
West Roxbury YMCA	Construction of a new YMCA on 15 Bellevue Street in West Roxbury, Massachusetts and demolition of the former Federal Post Office at 1972 Centre Street and portions of the existing YMCA facility.	Proposed construction 2014	0.3 mile from MP 5.1 of the West Roxbury Lateral	GW, SW, WT, VG, WD
West Roxbury Crushed Stone Quarry	An existing crushed stone quarry in West Roxbury, Massachusetts	In service	Adjacent to West Roxbury Lateral from MPs 4.2 to 4.4	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would include 10.1 miles of new loop pipeline and a new compressor station in Norfolk County, Massachusetts.	Construction planned for 2017 assuming approvals are obtained	Unknown	G, S, L, R, VI, C, T, SW, GW, WT, VG, WD, A, N
Residential, Commercial, and Industrial Developments	Several planned residential, commercial, and/or industrial developments are proposed in the Project area (see table 4.8.3-1).	Various	Various	L, R, T, SW, GW, VG, WD, A, N
<b>EXISTING COMPRESSOR STATION MODIFICATIONS</b>				
Atlantic Bridge Project	Algonquin's Atlantic Bridge Project would involve the installation and operation of an unspecified amount of additional compression at existing compressor stations in New York, Connecticut, Rhode Island, and Massachusetts.	Construction planned for 2017 assuming approvals are obtained	Additional compression would be added at the existing Stony Point, Southeast, Cromwell, Chaplin, and Burrillville Compressor Stations	A, N
Interstate 684 Northbound to Interstate 84 Eastbound Ramp Improvement Project	Modify the ramp alignment and improve the signs associated with the connecting ramp between Northbound Interstate 684 and Eastbound Interstate 84 in the Town of Southeast, New York.	Proposed construction 2014 to 2015	2.8 miles from the Southeast Compressor Station	GW, SW, WT, VG, WD

TABLE 4.13-1 (cont'd)				
Existing or Proposed Projects Evaluated for Potential Cumulative Impacts in Conjunction with the AIM Project				
Facility/Project	Description	Status	Location Relative to AIM Project	Resources Cumulatively Affected
<p><sup>a</sup> G=Geology, S=Soils, L=Land Use, R=Residential Areas, VI=Visual, C=Cultural, T=Traffic, SW=Surface Water, GW=Ground Water, WT=Wetlands, VG=Vegetation, WD=Wildlife, A=Air Quality, N=Noise</p> <p>Sources:</p> <p>Haverstraw Water Supply Project Draft Environmental Impact Statement. Available online at <a href="http://www.haverstrawwatersupplyproject.com/">http://www.haverstrawwatersupplyproject.com/</a>.</p> <p>Harbors at Haverstraw. Available online at <a href="http://harborsathaverstraw.com/riverfront-community/">http://harborsathaverstraw.com/riverfront-community/</a>.</p> <p>Case 12-E-0503 – Con Edison Filing of Supplemental Information Regarding its Ramapo to Rock Tavern Project. Available online at <a href="http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BEC50A411-6B52-4E6D-8C39-6BB927A9E4EF%7D">http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BEC50A411-6B52-4E6D-8C39-6BB927A9E4EF%7D</a>.</p> <p>NRG Bowline Repowering Project. Available online at <a href="http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B659807BC-DA08-4F48-9EAA-0024B8314395%7D">http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B659807BC-DA08-4F48-9EAA-0024B8314395%7D</a>.</p> <p>INTERVIEW – NRG could help NY replace Indian Point Nuclear Plant. Available online at <a href="http://articles.chicagotribune.com/2013-01-31/news/sns-rt-utilities-nrgindianpoint-interview1n0atfjx-20130131_1_energy-highway-plan-electric-market-prices-indian-point">http://articles.chicagotribune.com/2013-01-31/news/sns-rt-utilities-nrgindianpoint-interview1n0atfjx-20130131_1_energy-highway-plan-electric-market-prices-indian-point</a>.</p> <p>Boundless Energy NE, LLC - Statement of Intent: <a href="http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BE9B50316-69E6-4FAD-BDC9-DAEA818E077D%7D">http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BE9B50316-69E6-4FAD-BDC9-DAEA818E077D%7D</a>.</p> <p>New York State Department of Transportation. Available online at <a href="https://www.dot.ny.gov/index">https://www.dot.ny.gov/index</a>.</p> <p>Connecticut Department of Transportation: <a href="http://www.ct.gov/dot/site/default.asp">http://www.ct.gov/dot/site/default.asp</a></p> <p>Massachusetts Department of Transportation. Available online at <a href="https://www.massdot.state.ma.us/">https://www.massdot.state.ma.us/</a>.</p> <p>Boston Redevelop Authority. Available online at <a href="http://www.bostonredevelopmentauthority.org/Home.asp">http://www.bostonredevelopmentauthority.org/Home.asp</a>.</p>				

## Other Known Projects

In addition to those projects identified in table 4.13-1, there are other FERC-jurisdictional natural gas projects currently proposed or under consideration in the states affected by the proposed Project. These include Algonquin's Salem Lateral Project in Massachusetts; Tennessee's Connecticut Expansion Project in New York, Massachusetts, and Connecticut; Tennessee's Northeast Energy Direct Project in New York and Massachusetts; National Fuel Gas Supply Corporation's Northern Access 2015 Project in New York; National Fuel Gas Supply Corporation and Empire Pipeline, Inc.'s Northern Access 2016 and Tuscarora Lateral Projects in New York; and Dominion Gas Transmission's New Market Project in New York. However, none of these other projects would occur within the same region of influence as the AIM Project and are therefore not discussed further.

Algonquin is also currently evaluating proposals to modify other parts of its existing interstate natural gas pipeline system to meet the growing market demand for increased energy (Algonquin, 2014d). We are aware of two planned expansions. The first is as the Atlantic Bridge Project and would involve work in New York, Connecticut, Rhode Island, and Massachusetts. Similar to the scope of the AIM Project, the planned facility modifications associated with the Atlantic Bridge Project would generally consist of replacing sections of existing pipeline with new larger diameter pipeline, installing pipeline adjacent to sections of existing pipeline, increasing compression at existing compressor stations, and modifying a number of existing meter stations to provide for increased deliveries. The specific details about the Atlantic Bridge Project are currently not fully developed and no applications have been filed. However, Algonquin provided information about the project in its comments on the draft EIS. We note that because this project is still under development, the information provided presents the conservative, larger scope under consideration. Similar to the AIM Project, upon requesting use of the pre-filing process, during the pre-filing process, or upon submitting an application, the Atlantic Bridge Project may be reduced in scope to reflect its purpose and the refined developed facilities.



The project may include 52.5 miles of new loop and replacement of existing pipeline and additional compression at six existing Algonquin compressor stations and one new compressor station. All 52.5 miles would be within or adjacent to existing rights-of-way, consisting primarily of Algonquin's pipeline right-of-way, and including small areas of public roadways, railways, and/or other utility rights-of-way.

Specifically, the Atlantic Bridge Project may involve:

- New York facilities comprising:
  - a. 8.0 miles of 42-inch-diameter pipeline to replace 8.0 miles of existing 26-inch-diameter pipeline in Rockland (1.2 miles), and Putnam and Westchester (6.8 miles) Counties; and
  - b. additional compression at Algonquin's existing Southeast and Stony Point Compressor Stations in the Towns of Southeast in Putnam County, and Stony Point in Rockland County; and
- Connecticut facilities comprising:
  - a. 11.9 miles of new 36-inch-diameter loop pipeline to extend the existing 36-inch-diameter loop along its Cromwell system in Hartford, Middlesex, and Tolland Counties;
  - b. 5.8 miles of new 12- and 36-inch-diameter loop pipeline along its Chaplin (3.9 miles) and P-1 (1.9 miles) systems in Windham and Hartford Counties;
  - c. 12.0 miles of 16- and 42-inch-diameter pipeline to replace 12.0 miles of existing 6- and 26-inch-diameter pipeline along its E-1 (2.2 miles), Oxford (5.6 miles), and Southeast (4.2 miles) systems in New London, New Haven, and Fairfield Counties;
  - d. additional compression and cooling at Algonquin's existing Chaplin Compressor Station in the Town of Chaplin in Windham County; and
  - e. additional compression at Algonquin's existing Cromwell and Oxford Compressor Stations in the Towns of Cromwell in Middlesex County and Oxford in New Haven County; and
- Massachusetts facilities comprising:
  - a. 10.3 miles of new 16- and 30-inch-diameter loop pipeline along its G-4 and Q-1 systems in Bristol (0.2 mile) and Norfolk (10.1 miles) Counties;
  - b. 1.0 mile of 20-inch-diameter pipeline to replace 1.0 mile of existing 8-inch-diameter pipeline along its G-8 system in Barnstable County; and
  - c. a new Weymouth Compressor Station in the Town of Weymouth in Norfolk County; and

- Rhode Island Facilities comprising:
  - a. 3.5 miles of new 12- and 16-inch-diameter loop pipeline along its G-2 (2.2 miles) and G-4 (1.3 miles) systems in Newport County; and
  - b. additional compression at Algonquin's existing Burrillville Compressor Station in the Town of Burrillville in Providence County.

If the Atlantic Bridge Project were to move forward, it does appear that there would be facilities within the same region of influence as the AIM Project. Impacts associated with the Atlantic Bridge Project would be similar to those of the AIM Project (i.e., short term and localized during construction). Although the same region of influence would be affected, the temporal scale of the projects is different. The AIM Project would be constructed in 2015 and 2016. The earliest the Atlantic Bridge Project would be placed into service would be November 2017. If the Atlantic Bridge Project gets constructed, air emissions during operation of compressor stations would overlap with the operational air emissions of the AIM Project. Additional discussion of the Atlantic Bridge Project is included in the cumulative impact assessment by resource below.

The other planned Algonquin project is the Access Northeast Project. According to Spectra Energy's website, this project is being developed in response to the New England governors' initiative on new energy infrastructure and in anticipation of a request for a proposal from the New England States Committee on Electricity to expand existing natural gas pipeline capacity and meet critical demand for reliable electric power generation. Algonquin claims this project would provide New England power generators with greater fuel certainty and performance flexibility with no-notice, firm, and interruptible natural gas transportation services. It would also potentially provide LDCs with access to new supplies of natural gas to support initiatives by the LDCs to have customers convert to natural gas for heating. Spectra Energy's website indicates that the company hoped to secure expression of interest from potential customers by the end of 2014, but it does not provide any information about the size or location of the proposed facilities. Spectra Energy indicates that, if they receive adequate market support, they would begin seeking regulatory approvals in 2015 with a goal of constructing and placing the facilities in service by the end of 2018. Because the Access Northeast Project would not occur at the same time as the AIM Project, and because details are not known, it is not considered further in this analysis.

### **Marcellus Shale**

We received numerous comments during scoping for the Project and in response to the draft EIS about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus shale region. Marcellus shale development activities may be considered under the category above for major transportation and energy development projects; however, activities associated with Marcellus shale development would occur well over 10 miles from the AIM Project construction area, outside of the sub-watersheds crossed by the AIM Project facilities, and outside of the AQCRs for the AIM Project compressor stations. As a result, the local resources that may be affected by Marcellus shale development would not be affected by the Project, and local resources affected by the Project would not be affected by development in the Marcellus shale region. Therefore, cumulative impacts associated with Marcellus shale development are not discussed further.

### **Growth-inducing Effects**

The EPA and commentors requested that we identify any growth-inducing impacts from the AIM Project. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR 1508.8(b)). Typically, the growth-inducing potential of a

project would be considered adverse if it fosters growth or a concentration of population above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Growth impacts could also occur if a project provides infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies.

The Project area is already served by various natural gas transmission lines so the Project would not extend public service to areas currently unserved by natural gas transmission lines. However, the new West Roxbury Lateral would support long-term growth in the Boston area, as well as enhance and reinforce the existing Boston gas delivery system and reliability during outage situations. LDCs may build additional lines to serve the new customers, but it is speculative to assume where the new lines would go and the resulting impacts.

The operation of the proposed Project may result in some air quality and climate benefits if a portion of the additional natural gas that is delivered to the region is used to off-set the use of oil-fired electrical generating units during time periods when cleaner-burning natural gas-fired electrical generating units are not able to procure sufficient fuel to meet electrical demands. In addition, economic activity is already taking place. The demand for energy and the proposed Project are a result of, rather than a precursor to, development in this region. Therefore, the Project would not result in adverse growth-inducing effects.

#### **4.13.1 Geology and Soils**

The facilities associated with the AIM Project are expected to have a direct but temporary impact on near-surface geology and soils. Clearing activities could expose the soil to erosive elements such as precipitation and wind. The potential for impacts due to erosion by water is minimal because less than 4 percent of the soils along the proposed Project pipeline segments would be susceptible to water erosion and are found entirely along the pipeline segments in Connecticut. Similarly, about 4 percent of AIM's Project facilities would disturb soils considered to be susceptible to wind erosion. About 8.3 miles of the soils along the proposed pipeline segments are considered prime farmland. Additionally, about 101.0 acres of soils within the proposed pipeline workspaces and 7.4 acres of the soils within the permanent rights-of-way are also considered prime farmland. Impacts on geological and soil resources would be minimized by implementation of Algonquin's E&SCP.

The effects on geology and soils would be highly localized and limited primarily to the period of construction; therefore, cumulative impacts on geology and soils would only occur if other projects are constructed at the same time and place as the proposed facilities. If the Atlantic Bridge project moves forward as currently planned, the impacts of the Atlantic Bridge Project on geology and soils would be similar to those of the AIM Project (i.e., short-term and localized impacts on topography and soils during construction). Although many of the same general areas would be affected, the temporal scale of the projects is different. The AIM Project would be constructed in 2015 and 2016, and the disturbed areas would be restored prior to any start of the Atlantic Bridge Project, which at its earliest would be constructed in 2017. This assumes that Algonquin files an application and that the project is approved by the appropriate federal and state agencies. For this reason, and because we do not anticipate any major long-term effects on geology and soils, there would be no significant cumulative impact on soils associated with the AIM and Atlantic Bridge Projects.

The construction of some of the projects listed in table 4.13-1, such as the West Point Transmission Project and Champlain Hudson Power Express Project, could coincide with the schedule proposed for the AIM Project. Projects that require significant excavation or grading would also have temporary, direct impacts on near-surface geology and soils, although, like the AIM Project, the duration and effect of these projects would be minimized by the implementation of erosion control and restoration measures. Construction and restoration activities as well as operation and maintenance activities would

be monitored throughout the process to ensure compliance. Should hazardous materials or contaminated soils and/or sediments be encountered during construction, they would be disposed of at fully licensed and permitted disposal facilities in accordance with applicable state and federal laws and regulations. Consequently, any potential cumulative effects on geological and soil resources would be minor.

Many scoping comments were received regarding the potential cumulative effect of blasting operations associated with the proposed Project and the existing West Roxbury Crushed Stone Quarry. Algonquin discussed with the owners of the quarry the anticipated schedule and logistics associated with constructing the West Roxbury Lateral and M&R station, as well as the long-term operations of these facilities. No direct conflicts were identified that would inhibit the construction of the Project or the continued day-to-day operation of the quarry. Further, blasting at the quarry is performed under a permit issued by the City of Boston Fire Department, which specifies a limit on the allowable blast-induced vibration magnitude (e.g., amplitude or peak particle velocity) at any abutting property of 1.0 inch per second. Similarly, if blasting is required for the Project, it would be conducted in accordance with Algonquin's Rock Removal Plan (see appendix E) as well as applicable state blasting codes and any local blasting requirements. All blasting activity would be performed by state-licensed professionals according to strict guidelines designed to control energy release. Proper safeguards would be taken to protect personnel and property in the area. Therefore, we do not anticipate any significant cumulative effects as a result of blasting in this area.

Comments were also received regarding the future plans of the West Roxbury Crushed Stone Quarry and the potential for closing of the quarry and reclamation of the site. It is our understanding that although preliminary information on the filling of the quarry was provided to the MassDEP in January 2014, no specific plan has been proposed or authorizations requested. The type of soil to be used in the reclamation appears to be under debate. Therefore, any future plans are speculative at this point. In addition, reclamation of the site would likely need to occur over decades. As a result, any overlap with construction of the AIM Project seems unlikely. Further, a filling and closing of the quarry would negate many of the same commentor's concerns regarding quarry blasting impacts on the of the AIM Project.

#### **4.13.2 Waterbodies, Groundwater and Wetlands**

Cumulative effects on surface water resources affected by the AIM Project would be limited to waterbodies that are affected by other projects located within the same major watershed. A total of 102 waterbody crossings would be required for the Project, including 36 perennial streams, 62 intermittent streams, 3 ephemeral streams, and one ponded area. Some of the projects listed in table 4.13-1 would be located within the same major watersheds crossed by the AIM Project, but only a small number of these (e.g., the Atlantic Bridge Project, West Point Transmission Project, Champlain Hudson Power Express Project, U.S. Gypsum Company dredging project, which are discussed in more detail in section 4.13.3) would likely involve direct in-stream impacts. Based on current preliminary plans, 77 waterbodies would be crossed during construction of the Atlantic Bridge Project, including the Connecticut River, which would be crossed using the HDD construction method. The AIM Project would not involve the construction of permanent diversions or dams and, therefore, is expected to have only temporary impacts on surface water quality. The greatest potential impacts of pipeline construction on surface waters would result from an increase in sediment loading to surface waters and an increase in internal sediment loading due to channel/floodplain instability as a result of a change in erosion/deposition patterns. The level of impact would depend on precipitation events, sediment loads, stream area/velocity, channel integrity, bed material, and the proposed construction method. The impacts would be avoided or minimized by the use of Algonquin's E&SCP, BDP Plan for monitoring HDD activities, and SPCC Plan.

Cumulative effects on groundwater resources are expected to be limited to areas that are affected by other projects located near the AIM Project facilities. Groundwater impacts could include increased

turbidity, reduced water levels, and contamination. Nearby water wells could also be damaged by construction. If a water supply well is damaged as a result of Project construction, Algonquin would ensure that a temporary source of water is provided until the damaged water well is restored to its preconstruction capacity and quality, a replacement water source would be provided, or the landowner would be fairly compensated for damages. The impacts on groundwater would be avoided or minimized by the use of both standard and specialized construction techniques, including those specified in Algonquin's E&SCP and BDP Plan for monitoring HDD activities.

Algonquin would hydrostatically test the new pipeline segments in accordance with PHMSA pipeline safety regulations in 49 CFR 192 prior to placing the pipeline facilities into service. Algonquin estimates a need for a total of about 10,082,645 gallons of water to conduct the hydrostatic testing for the Project (9,610,245 gallons for pipeline testing and 472,400 gallons for aboveground facilities). Most of this water would be obtained from municipal sources, but some would be appropriated from the old Verplanck Quarry Lake in New York. However, to our knowledge none of the projects listed in table 4.13-1 would be expected to use water from the Old Verplanck Quarry Lake at the same time or at all. Following testing of the pipeline, the water would be discharged into dewatering structures located in upland areas and within the construction work area in accordance with the AIM Project E&SCP and the hydrostatic testing BMPs provided by agencies. Therefore, long-term impacts on surface water sources would not be anticipated as a result of hydrostatic testing activities, and we expect the cumulative impacts of the projects listed in table 4.13-1 on surface and groundwater resources to be minor.

There would be a temporary loss of some existing wetland features as a result of the construction and operation of the proposed AIM Project facilities and the other reasonably foreseeable projects in the States of New York and Connecticut as listed in table 4.13-1. No wetlands would be affected in Rhode Island or Massachusetts from construction or operation of Project facilities. The AIM Project would convert about 2.4 acres of PFO wetlands to non-forested wetlands during operation of the pipeline facilities. There would be no wetland impacts from proposed aboveground facilities, and the Project would not result in any permanent loss of wetlands. Preliminary estimates for the Atlantic Bridge Project are that 45.9 acres of wetlands would be affected during construction. Algonquin would mitigate unavoidable construction-related impacts on wetlands associated with the AIM Project by implementing the wetland protection and restoration measures contained in its E&SCP and by complying with the conditions of the wetland permits that could be issued by the USACE, NYSDEC, and CTDEEP as well as compensatory mitigation. Similar mitigation would be required for any unavoidable wetland impacts associated with the Atlantic Bridge Project and the other projects listed in table 4.13-1. Although construction of the AIM Project along with the other projects in the area could result in the conversion or reduction in the amount of existing wetlands in the vicinity, the creation of new wetlands and restoration or enhancement of existing wetlands as required by the USACE are expected to appropriately mitigate for impacts on wetland resources and minimize any cumulative wetland effects.

#### **4.13.3 Vegetation, Wildlife and Habitat, and Aquatic Resources**

Construction of the Project would temporarily impact about 352.4 acres of forested upland and open upland vegetation. The Project would result in the permanent impact on about 34.7 acres of vegetation, primarily forested upland. Right-of-way clearing and grading and other construction activities associated with the Project along with some of the other projects listed in table 4.13-1 would result in the removal of vegetation; alteration of wildlife habitat; displacement of wildlife; and other potential secondary effects such as increased population stress, predation, and the establishment of invasive plant species. These effects would be greatest where the other projects are constructed within the same timeframe and areas as the proposed AIM Project, and where the recovery time of the vegetation/habitat takes longer to restore to its preconstruction state. The Atlantic Bridge Project, for example, would include pipeline facilities in many of the same counties as the AIM Project. Given its length of pipeline

(which includes 15 miles more pipeline than the AIM Project), it would likely result in vegetation, wildlife, and aquatic impacts that exceed the AIM Project. These effects would be separated in time by about a year, but the long-term effects of tree clearing and associated change in habitats would persist.

Algonquin's proposal to locate the majority of its facilities within or adjacent to existing, previously disturbed rights-of-way (e.g., pipeline utility, road, etc.) would minimize the areas of previously undisturbed vegetation that would be affected, thereby reducing the additional cumulative effects on vegetation communities and wildlife habitats, including migratory birds. The potential for habitat fragmentation resulting from the Project would be further reduced, because the majority of the disturbed areas would be allowed to return to pre-existing conditions following construction. The geographic extent and duration of disturbances caused by construction of the Project would be minimal and further reduced by implementation of Algonquin's E&SCP and other construction, restoration, and mitigation plans. Based on our understanding of the Atlantic Bridge Project, it would also be entirely located within or adjacent to existing rights-of-way and most disturbed areas would be allowed to return to pre-existing conditions, which would minimize impacts.

Construction of the AIM Project at the same time as other projects listed in table 4.13-1 could result in cumulative impacts on aquatic resources within the AIM Project area, including groundwater, surface water, and wetlands. Thirty of the waterbodies that would be crossed by the Project support fisheries of special concern (two would be crossed by HDD, thereby avoiding in-stream impacts). Eight waterbodies are waters with naturally occurring spawning populations of trout. It is unclear how many of these streams could be effected by other projects but, given that the Atlantic Bridge Project would include pipeline facilities in many of the same counties as the AIM Project, there is a potential for cumulative surface water and aquatic resource impacts. Potential impacts on waterbodies within the collective AIM and Atlantic Bridge Project areas include sedimentation and turbidity, destruction of stream cover, introduction of water pollutants, interruption of fish migration and spawning, and entrainment of fish. The potential impacts of each project would be minimized through the implementation of Algonquin's E&SCP, SPCC Plan, and site-specific crossing plans prepared in consultation with the FERC and other agencies. The potential for cumulative impact would also be minimized due to the short duration of the proposed in-stream activities and the 1-year separation in time between the construction schedules of the AIM and Atlantic Bridge Projects. Collectively, these measures would avoid significant cumulative impacts on waterbodies resources. If any of the other projects listed in table 4.13-1 would involve direct in-stream impacts on waterbodies, they would be required to obtain permits from the USACE and appropriate state agencies, and consult with the EPA, the FWS, and NOAA Fisheries as applicable. These agencies would assess the potential for cumulative impacts from these projects and require measures to mitigate impacts on aquatic resources associated with these other projects. Therefore, the cumulative effects on aquatic resources would be minor.

One waterbody (the Hudson River) contains threatened and endangered species and anadromous fisheries. Both the proposed West Point Transmission Project and Champlain Hudson Power Express Projects would be buried in the Hudson River for several miles including the area crossed or very near the proposed AIM crossing location, and the U.S. Gypsum Company conducts ongoing maintenance dredging nearby. Combined, these activities would result in water quality impacts and could potentially affect threatened and endangered species and anadromous fisheries within the river. The AIM Project is not expected to contribute to the cumulative impact of these other projects. Algonquin would avoid impacting the special status species in the Hudson River by using the HDD crossing method. Should an inadvertent release of drilling fluid occur, Algonquin would implement the measures detailed in its BDP Plan for monitoring the HDD program.

A total of nine federally listed species, under the jurisdiction of either the FWS or NOAA Fisheries, are known to occur in the Project area. One additional species is a candidate species and one is

proposed for listing under the ESA. Through consultation with the state agencies, 29 state-listed threatened, endangered, or special concern species were identified as potentially occurring in the New York and Connecticut sections of the Project area. No state-listed species were identified as a concern for the Project in Rhode Island and Massachusetts. Cumulative impacts on these species could result if other reasonably foreseeable future projects listed in table 4.13-1 would affect these same species or their habitat. The AIM Project would have no effect on seven of these species. Four of these species may be affected, but would not be adversely affected or jeopardize the continued existence of the species. Algonquin would adhere to conservation measures to avoid, minimize, and mitigate impacts on any listed species affected by the Project. Furthermore, Algonquin has committed to an overall conservation plan for state-listed species in Connecticut. Conservation measures would likely be required as well for each of the other projects by the jurisdictional agencies to minimize potential impacts on federally and state-listed species. Overall, the conservation measures would be project-specific and would be expected to reduce impacts such that the projects would not adversely affect special status species or would not jeopardize the continued existence of a species or cause adverse modification of critical habitat.

#### **4.13.4 Land Use, Recreation, Special Interest Areas, and Visual Resources**

##### **Land Use**

The AIM Project in combination with other foreseeable future projects listed in table 4.13-1 would result in temporary and permanent changes on current land uses. Construction of the Project would impact a total of about 575.6 acres. The primary land use types impacted during construction would be forest/woodland (33 percent), open land (28 percent), industrial/commercial land (26 percent), and residential land (9 percent). Agricultural land and open water would make up the remaining 4 percent of land types impacted during construction of the proposed Project. The majority of land use impacts associated with the AIM Project would be temporary, as most land uses would be allowed to revert to prior uses following construction. However, about 42.4 acres of new land outside of Algonquin's existing permanent right-of-way would be permanently encumbered by operation of the Project. The primary land use types that would be permanently encumbered would be forest/woodland (64 percent), open land (18 percent), industrial/commercial land (7 percent), and agricultural land (7 percent). Open water and residential land would make up the remaining 4 percent of permanent impacts. The Atlantic Bridge Project would affect about 700 acres of land during construction and operation. Of the 700 acres, about 390 acres would be within existing rights-of-way. About 110 acres of new permanent right-of-way would be required for the Atlantic Bridge Project. Like with the AIM Project, most land use impacts would be temporary and most land would revert to prior uses following construction. If the other utility and commercial/residential development projects planned in the AIM Project area as listed in table 4.13-1 would also affect similar land uses, then cumulative impacts would also result. However, compared to the other proposed projects the permanent change in land use from implementation of the AIM Project (and the Atlantic Bridge Project if it is approved and constructed) would be relatively minor and would not represent a significant cumulative impact.

##### **Recreation and Special Interest Areas**

A number of recreational or areas of special interest would be affected by the AIM Project and cumulative impacts on recreational or special interest areas could result if the other foreseeable future projects listed in table 4.13-1 would affect the same area at the same time. However, at present we are not aware of recreational areas that would be affected by both the AIM Project and one or more of the other projects in table 4.13-1. The Atlantic Bridge Project would include many facilities in the same counties as the AIM Project and some of these facilities would be in the same location as or adjacent to the AIM Project facilities, but we have not identified specific recreational areas that would be directly affected by both projects. In general, Project impacts on recreational and special interest areas occurring

outside of forest land would be temporary and limited to the period of active construction, which typically lasts only several days to several weeks in any one area. These impacts would be minimized by implementing Algonquin's E&SCP. Following construction, most open land uses would be able to revert to their former uses. Forest land affected by the temporary construction right-of-way and ATWS areas, however, would experience long-term impacts because of the time required to restore the woody vegetation to its preconstruction condition. Further, forest land within the new permanent right-of-way would experience permanent impacts because it would be precluded from being reestablished within the maintained portion of the right-of-way. Algonquin would construct the majority of the Project adjacent to its existing pipelines within its existing permanent right-of-way or largely overlapping its existing permanent right-of-way, or within or adjacent to existing roadways. In addition, some of the other projects listed in table 4.13-1 have or would cross federal, state, or local recreation and special interest areas. However, none appear to cross the same areas as those affected by the AIM Project. As a result, although the Project could have significant impacts on recreation and special interest areas, cumulative impacts on those same areas are not anticipated.

## **Visual Resources**

The visual character of the existing landscape is defined by historic and current land uses such as recreation, conservation, and development. The visual qualities of the landscape are further influenced by existing linear installations such as highways, railroads, pipelines, and electrical transmission and distribution lines. Temporary visual impacts would be evident during Project construction due to clearing, grading, and construction activities. The majority of aboveground facilities associated with the AIM Project would consist of modifications to existing structures. The modifications to the existing compressor stations would be conducted within or adjacent to Algonquin's existing station buildings and within the footprint of an existing commercial/industrial property. Construction of the new M&R stations, specifically the West Roxbury M&R Station and Oakland Heights M&R Station, would not result in significant visual impacts on the surrounding areas with implementation of site-specific mitigation measures such as maintaining vegetative buffers.

Of the projects listed in table 4.13-1, the proposed transportation and commercial/residential projects would have the greatest cumulative impact on visual resources in the Project area. The majority of the Atlantic Bridge, West Point Transmission Project, and Champlain Hudson Power Express Projects would be buried and all but one of the known aboveground facilities associated with the Atlantic Bridge Project would be located at existing compressor stations. The AIM Project facilities would add incrementally to this impact but the overall contribution would be relatively minor given that the majority of the AIM Project facilities would be buried (i.e., the pipeline) or adjacent to existing facilities of similar appearance (i.e., the aboveground facilities). Additionally, disturbed areas would be revegetated as appropriate after construction, thereby limiting permanent visual impacts on those areas where previously existing forest would not be allowed to reestablish within the new permanent right-of-way due to pipeline safety and operational requirements. Therefore, cumulative visual impacts would be minimal.

## **4.13.5 Socioeconomics**

Present and reasonably foreseeable future projects and activities could cumulatively impact socioeconomic conditions in the AIM Project area. As described below, employment, housing, infrastructure, and public services could experience both beneficial and negative impacts.

### **Economy and Employment**

The projects considered in this section would have cumulative effects on employment during construction if more than one project is built at the same time. Algonquin estimates that the AIM Project would temporarily employ up to 2,693 workers during the peak construction months, of which a peak of



649 workers would be local hires. These local hires would include surveyors, welders, equipment operators, and general laborers. The counties affected by the Project have a combined civilian labor force of about 3,750,965 people and an average unemployment rate of 7.3 percent. This suggests that the local labor force could meet much of the employment needs required for construction of these projects, although it is unknown whether a sufficient number of local unemployed persons have the necessary skills to work on these projects. Therefore, if these projects are built at the same time, the demand for workers could exceed the local supply of appropriately skilled labor. The schedule for construction of the Atlantic Bridge Project, if approved, would be a year after the AIM Project facilities would be placed in service. As such, it is not expected to compound any potential shortage of appropriately skilled labor, but because it is in the same area as the AIM Project and could be constructed shortly after the AIM Project, it could extend the term of employment for many temporary workers. Neither project singly or in combination would have a measurable long-term impact on the economy or employment. Three new permanent employees would be hired to operate the proposed AIM Project facilities and it is likely that a similar number of new permanent employees would be hired for the Atlantic Bridge Project. The long-term employment opportunities associated with the other projects in table 4.13-1 is unknown but they are likely to provide a moderate amount of other permanent employment opportunities.

In addition to impacts on local employment, these projects would provide an increase in tax revenue for New York, Connecticut, Rhode Island, and Massachusetts, and other local economies through the payment of payroll tax, sales tax, property tax, and other taxes and fees. As discussed in section 4.9.8, the estimated payroll for the AIM Project would be about \$264,316,027 during the construction phase and annual property taxes attributable to the Project are anticipated to be about \$20,070,000 in New York, \$5,770,000 in Connecticut, \$970,000 in Rhode Island, and \$2,360,000 in Massachusetts, which includes construction of the new West Roxbury Lateral. Given the larger size and later start date for the Atlantic Bridge Project (and the likelihood of some inflation over the time period separating the two projects), the estimated construction payroll for the Atlantic Bridge Project may be larger. The annual property taxes attributable to the Atlantic Bridge Project are also likely to be similar. A net increase in payroll and tax revenues is likely to occur from the other projects listed in table 4.13-1 as well. Cumulatively, these projects would have both short- and long-term beneficial impacts on state, county, and local economies.

### **Temporary Housing**

Temporary housing would be required for construction workers who would be needed for the portion of the workforce not drawn from the local area. Given the current vacancy rates, the number of rental housing units in the area, and the number of hotel/motel rooms available in the cities and towns in the vicinity of the Project, construction workers should not encounter difficulty in finding temporary housing. If construction occurs concurrently with other projects, temporary housing would still be available but may be slightly more difficult to find and/or more expensive to secure. Regardless, these effects would be temporary, lasting only for the duration of construction, and there would be no long-term cumulative impact on housing from the proposed Project.

### **Public Services**

The cumulative impact of the AIM Project and the other projects listed in table 4.13-1 on infrastructure and public services would depend on the number of projects under construction at one time. The small incremental demands of several projects occurring at the same time could become difficult for police, fire, and emergency service personnel to address. This problem would be temporary, occurring only for the duration of construction, and could be mitigated by the various project sponsors providing their own personnel to augment the local capability or by providing additional funds or training for local personnel. Because no long-term impacts from implementation of the AIM Project would be anticipated on infrastructure and public services, we find no long long-term cumulative effects would occur.

## **Traffic and Transportation**

Construction of the proposed Project would have a temporary impact on road traffic in some areas and could contribute to cumulative traffic, parking, and transit impacts if other projects are scheduled to take place at the same time and in the same area as the AIM Project. Traffic impacts associated with the AIM Project are expected along the new West Roxbury Lateral in Norfolk and Suffolk Counties, Massachusetts. Limited traffic impacts would occur at most other proposed railroad, highways, and major road crossings because these would be accomplished by drilling, boring, or other methods that do not affect the road or rail surface.

The addition of traffic associated with construction personnel commuting to and from the Project construction work areas could also contribute to cumulative regional traffic congestion. However, any contribution of the AIM Project to cumulative traffic impacts would be temporary and short term. Workers associated with the AIM Project would generally commute to and from the pipeline right-of-way, pipe and contractor ware yards, or aboveground facility sites during off-peak traffic hours 6 days a week (e.g., before 7:00 a.m. and after 6:00 p.m.). The Atlantic Bridge Project would not contribute to the traffic impacts of the AIM Project because it would be constructed a year later than the AIM Project. It is also unlikely that other projects listed in table 4.13.1 would have similar commuting schedules or reach peak traffic conditions simultaneously.

Other factors would also minimize the potential for cumulative traffic impacts due to the AIM Project. Algonquin stated that construction work within roadways and specific crossings would be scheduled to avoid commuter traffic and schedules for school buses and local city transit buses to the greatest extent practical. To minimize traffic delays at open-cut road crossings, Algonquin would establish detours before cutting these roads. If no reasonable detours were feasible, at least one traffic lane of the road would be left open, except for brief periods when road closure would be required to lay the pipeline. Impacts associated with in-street construction would be minimized through implementation of Algonquin's site-specific Traffic Management Plans. Appropriate traffic management and signage would be set up and necessary safety measures would be developed in compliance with applicable permits for work in the public roadway.

Although construction details are not available for all projects listed in table 4.13-1, we know or assume that the Champlain Hudson Power Express Project, West Point Transmission Project, and U.S. Gypsum Company dredging activities, as well as several other possible projects, would involve work in the Hudson River. Some of these projects would likely involve increased barge traffic that would navigate the Hudson River and/or remain stationary within the river during construction of individual projects. The HDD method would involve staging construction equipment on land, thus the AIM Project is not expected to result in cumulative impacts on navigation in the Hudson River with the other projects listed in table 4.13-1. Nonetheless, it is expected that all projects will coordinate with the U.S. Coast Guard and USACE to ensure that there are no cumulative impacts on navigation within the Hudson River.

Overall, the AIM Project would have short term, but positive effects on the economy in the Project area, such as increased employment thus lowering local unemployment rates and increased sales and tax revenues. Other major projects in the area would likely have similar impacts on the economy. Thus, short-term cumulative effects on socioeconomics in the Project area are possible.

### **4.13.6 Cultural Resources**

Past disturbances to cultural resources in the AIM Project area are typically related to accidental disturbances; intentional destruction or vandalism; lack of awareness of historical value; and construction and maintenance operations associated with existing roads, railroads, utility lines, and electrical transmission lines. The currently proposed projects listed in table 4.13-1 that are defined as federal

actions would include mitigation measures designed to avoid or minimize additional direct impacts on cultural resources. Where direct impacts on cultural resources are unavoidable, mitigation (e.g., recovery and curation of materials) would occur before construction. Non-federal actions would need to comply with any mitigation measures required by the affected states. Algonquin has developed Project-specific plans to address unanticipated discoveries of cultural resources and human remains in the event they are discovered during construction. Therefore, the proposed AIM Project may incrementally add to the cumulative effects of other projects that may occur at the same time. However, this incremental increase would not be significant.

Indian tribes in the Project area have expressed concern about the cumulative impacts on properties of traditional religious or cultural significance that may be affected by the various undertakings. For the AIM Project, we have engaged in frequent communications with the tribes who have expressed concern about the Project. Other agencies (e.g., USACE) also conduct tribal consultation for projects under their jurisdiction in order to identify and address any tribal concerns.

#### **4.13.7 Air Quality and Noise**

Construction of most of the reasonably foreseeable future projects and activities listed in table 4.13-1 would involve the use of heavy equipment that would generate emissions of air contaminants, fugitive dust, and noise. Construction and operation of the AIM Project would contribute cumulatively to air quality impacts. The combined impact of multiple construction projects occurring in the same airshed and timeframe as the AIM Project could temporarily add to the ongoing air impacts in the Project area. The entire AIM Project area is designated attainment or unclassifiable for SO<sub>2</sub>, NO<sub>2</sub>, PM<sub>10</sub>, and lead. Certain counties within the Project area are designated as nonattainment and/or maintenance for CO, ozone, and PM<sub>2.5</sub> as described in section 4.11.1.1. Construction activities for the proposed Project facilities and pipeline replacement activities would result in temporary increases in emissions of some pollutants due to the use of equipment powered by diesel or gasoline engines. Construction activities would also result in the temporary generation of fugitive dust due to land clearing, ground excavation, and cut and fill operations. The construction equipment emissions would result in short-term fugitive emissions that would be highly localized, temporary, and intermittent. Construction of many of the projects listed in table 4.13-1 would not occur at the same time as construction of the AIM Project facilities or are located sufficiently far away as to not result in cumulative air impacts. In addition, Algonquin has consulted with WPP and it has identified that construction of the converter station associated with the West Point Transmission Project, located on the same parcel, would not occur at the same time. Therefore, simultaneous cumulative air impacts of the AIM Project and West Point Transmission Project would not occur.

Modifications to the compressor stations and some of the M&R stations would be sources of air emissions during operation of the Project. Non-combustion related emissions would also occur from the pipeline and at the proposed M&R stations during normal operation. The air modeling presented in section 4.11.1 for each of the compressor stations demonstrates that impacts of the stations along with the existing air quality would not be significant. With the mitigation measures proposed by Algonquin, we do not anticipate that the construction and operation of the proposed Project facilities are expected to have a significant impact on air quality in the Project area or in the region itself. The potential emissions associated with the operation of the other projects in table 4.13-1 are unknown, but because the projects listed in the table are located over a large area; have varying construction schedules; and must adhere to federal, state, and local regulations for the protection of ambient air quality, significant cumulative impacts on air quality are not anticipated.

The one project that is likely to have a greater impact is the Atlantic Bridge Project. Algonquin has not identified how much compression would be required for this project but it has confirmed that it

plans to build one new compressor station and add compression at six existing compressor stations. Moreover, the additional compression would be installed at five of the compressor stations where additional compression is proposed as part of the AIM Project. If all of this additional compression is fuelled by natural gas, it is likely the Atlantic Bridge Project would have as much or more operational emissions than the AIM Project. The combined emissions of the two projects would contribute to cumulative impacts on the air quality within the airsheds encompassing these stations, but we do not believe the effect on regional air quality would be significant. Both projects would be subject to federal and state regulations designed to protect ambient air quality (thereby protecting public health and welfare) and prevent significant cumulative impacts. Prior to issuance of air quality permits, the authorities must make a determination that the cumulative effect of both projects would not cause or contribute to an exceedance of ambient air quality standards, that the appropriate level of control of new air emissions would be installed, and that the compressor stations would be in compliance with all applicable federal and state air quality regulations and permit conditions. Additionally, the combined operation of the proposed Project and the Atlantic Bridge Project may result in some air quality and climate benefits if a portion of the additional natural gas that is delivered to the region is used to off-set the use of oil-fired electrical generating units during time periods when cleaner-burning natural gas-fired electrical generating units are not able to procure sufficient fuel to meet electrical demands.

Several commentors believe that the emissions from all of the proposed Project compressor stations and M&R stations would cumulatively contribute to air quality impacts. The project facilities are geographically separated and do not all fall within the same region of influence. While all of the compressor station modifications would be part of the same project, they would not all impact the same air quality control regions. Therefore, it is inappropriate to add all compressor station emissions cumulatively. Of the compressor stations located within the same AQCR, the Stony Point and Cromwell Compressor Stations are located about 49 miles apart. All other compressor stations are located with different AQCRs. However, because prevailing winds blow in one direction at a time, air quality between facilities would not be affected by two facilities at the same time. Based on modeling analyses completed for the compressor station emissions associated with the proposed Project, emissions from one facility would be at *de minimis* levels before reaching the air space of the next facility.

The AIM Project could contribute to cumulative noise impacts. The analysis in section 4.11.2.1 quantifies future noise levels, which include Project related noise and ambient noise levels. Noise impacts were analyzed by looking at NSAs nearest to the five proposed compressor station modifications, the five existing M&R stations with significant proposed modifications, the three new proposed M&R stations, the two new MLRs, and HDD sites. This analysis included assessing current background noise levels and estimating future noise levels based upon the proposed equipment to be operated. Noise impacts during construction would be highly localized and attenuate quickly as the distance from the noise source increases. The one exception to this would be certain HDD activities at the Hudson River crossing and Interstate 84/Still River crossing. Algonquin performed ambient noise surveys at the HDD sites, and the assessments indicate that mitigation would be necessary at all proposed HDD entrance locations to reduce the predicted noise generated by the HDD operations below the FERC noise requirement (i.e.,  $L_{dn}$  of 55 dBA) at the closest NSAs. The AIM Project, together with the other projects listed in table 4.13-1, would all produce noise during construction; however, this noise would be temporary in the vicinity of each of the proposed projects.

Cumulative noise impacts are possible in the areas surrounding the existing compressor stations that would be impacted by the addition of compression associated with both the AIM and Atlantic Bridge Projects (assuming the Atlantic Bridge Project is approved and constructed). These include the Stony Point Compressor station in Rockland County, New York; Southeast Compressor Station in Putnam County, New York; Cromwell Compressor Station in Middlesex County, Connecticut; Chaplin Compressor Station in Windham County, Connecticut; and the Burrillville Compressor Station in

Providence County, Rhode Island. We reviewed Algonquin's noise assessment for the AIM Project and found that the proposed facilities could increase the existing noise levels at some NSAs between 0.1 and 1.7 dBA. Generally, these increases would be imperceptible to the human ear. Additionally, the mitigation measures discussed in the assessment and committed to by Algonquin would ensure that the FERC's noise criterion of 55 dBA would not be exceeded, Algonquin would follow our recommendations outlined in section 4.11.2.3 of this EIS for the AIM Project. Based on the analyses conducted, mitigation measures proposed, and our additional recommendations, we conclude that the Project would not result in significant noise impacts on residents, and the surrounding communities during construction and operation of the AIM Project. We anticipate that the Atlantic Bridge Project would result in noise impacts similar to the AIM Project. As part of its evaluation of the project, we would conduct a noise assessment of the Atlantic Bridge Project facilities. It is likely that this analysis would identify the potential for the Atlantic Bridge Project to increase the noise levels at some NSAs near compressor stations above what is predicted if only the AIM Project is constructed. However, Algonquin would be required, like it was for the AIM Project, to propose mitigation to ensure that the total noise at NSAs from the Atlantic Bridge Project either does not increase or stays below the 55dBA level. For these reasons, we do not anticipate significant noise impacts associated with construction and operation of the AIM Project.

#### **4.13.8 Climate Change**

Climate change is the change in climate over time, whether due to natural variability or as a result of human activity, and cannot be represented by single annual events or individual anomalies. For example, a single large flood event or particularly hot summer are not indications of climate change, while a series of floods or warm years that statistically change the average precipitation or temperature over years or decades may indicate climate change.

The Intergovernmental Panel on Climate Change (IPCC) is the leading international, multi-governmental scientific body for the assessment of climate change. The United States is a member of the IPCC and participates in the IPCC working groups to develop reports. The leading U.S. scientific body on climate change is the U.S. Global Change Research Program (USGCRP). Thirteen federal departments and agencies<sup>14</sup> participate in the USGCRP, which began as a presidential initiative in 1989 and was mandated by Congress in the Global Change Research Act of 1990.

The IPCC and USGCRP have recognized that:

- globally, GHGs have been accumulating in the atmosphere since the beginning of the industrial era (circa 1750);
- combustion of fossil fuels (coal, petroleum, and natural gas), combined with agriculture and clearing of forests is primarily responsible for this accumulation of GHG;
- these anthropogenic GHG emissions are the primary contributing factor to climate change; and
- impacts extend beyond atmospheric climate change alone, and include changes to water resources, transportation, agriculture, ecosystems, and human health.

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<sup>14</sup> The following departments comprise the USGCRP: EPA, DOE, U.S. Department of Commerce, U.S. Department of Defense, USDA, U.S. Department of the Interior, U.S. Department of State, PHMSA, Department of Health and Human Services, National Aeronautics and Space Administration, National Science Foundation, Smithsonian Institution, and Agency for International Development.

In May 2014, the USGCRP issued a report, *Climate Change Impacts in the United States*, summarizing the impacts that climate change has already had on the United States and what projected impacts climate change may have in the future (USGCRP, 2014). The report includes a breakdown of overall impacts by resource and impacts described for various regions of the United States. Although climate change is a global concern, for this cumulative analysis, we will focus on the potential cumulative impacts of climate change in the AIM Project area.

The USGCRP's report notes the following observations of environmental impacts that may be attributed to climate change in the Northeast region:

- average temperatures have risen about 2 °F between 1895 and 2011 and are projected to increase another 1 to 8 °F over the next several decades with more frequent days above 90 °F;
- areas that currently experience ozone pollution problems are projected to experience an increase in the number of days that fail to meet the federal air quality standards;
- an increase in health risks and costs for vulnerable populations due to projected additional heat stress and poor air quality;
- precipitation has increased by about 5 inches and winter precipitation is projected to increase 5 to 20 percent by the end of the century;
- extreme/heavy precipitation events have increased more than 70 percent between 1958 and 2010 and are projected to continue to increase;
- sea levels have risen about 1 foot since 1900 and are projected to continue increasing 1 to 4 feet by 2100 stressing infrastructure (e.g. communications, energy, transportation, water and wastewater);
- severe flooding due to sea-level rise and heavy downpours is likely to occur more frequently;
- crop damage from intense precipitation events, delays in crop plantings and harvest, and heat stress negatively affect crop yields;
- invasive weeds are projected to become more aggressive due to their benefit of higher CO<sub>2</sub> levels;
- a change in range, elevation, and intra-annual life cycle events of vegetation and wildlife species; and
- an increase in carrier habitat and human exposure to vector-borne diseases (e.g. Lyme disease or West Nile).

The GHG emissions associated with construction and operation of the AIM Project are discussed in more detail in section 4.11.1. Several commenters requested that a more in-depth cumulative impact analysis be prepared for GHG emissions, including requesting the prediction of future climate change impacts. FERC staff completed an impact analysis that was appropriate for the scale of the Project. In reference to predicting climate change impacts, FERC staff used guidance provided by the CEQ in their February 18, 2010 memorandum titled "Draft NEPA Guidance on Consideration of the Effect of Climate Change and Greenhouse Gas Emissions," which states that "agencies should recognize the scientific

limits of their ability to accurately predict climate change effects, especially of a short-term nature, and not devote effort to analyzing wholly speculative effects." On December 18, 2014, the CEQ released a revised draft GHG emission guidance memo. As recommended in this new guidance, to the extent practicable, FERC staff incorporated additional guidance provided by this memo into the GHG analysis completed for the AIM Project. As such, FERC staff has presented the GHG emissions associated with the Project, potential impacts of GHG emissions, and mitigation proposed by Algonquin to minimize GHG emissions associated with the Project. The GHG emissions from the other projects listed in table 4.13.1 are unknown. However, based on the relative size of the Atlantic Bridge Project and the number of new or existing compressor stations associated with it, it alone would likely result in as much if not more GHG emissions than the AIM Project. Emissions of GHGs from the proposed Project and other regional projects would not have any direct impacts on the environment in the Project area. Currently, there is no standard methodology to determine how a project's relatively small incremental contribution to GHGs would translate into physical effects on the global environment. Additionally, natural gas emits less CO<sub>2</sub> compared to other fuel sources (e.g., fuel oil or coal).

The CTDEEP issued its Comprehensive Energy Strategy that includes specific recommendations for increasing the use of natural gas in Connecticut (Comprehensive Energy Strategy, 2013). In Massachusetts, the MAEOEEA produced a strategic plan for 2013 to 2015 that includes reliable, clean, and cost-effective energy in their vision statement, and recommends "initiatives to increase availability of low-cost natural gas, like getting more natural gas into distribution systems and more pipeline capacity across the Commonwealth...." (MAEOEEA, 2013). In December 2013, the governors of the six New England states agreed to an energy initiative designed to bring affordable, cleaner, and more reliable power to homes and businesses across the northeast. This would be accomplished through cooperative investments in energy efficiency, renewable generation, natural gas pipelines, and electric transmission (New England Governors, 2013). Also, the USGCRP's Report states that additional investment into power generating infrastructure may be necessary to offset increasing demand associated with increased temperatures.

Because fuel oil is widely used as an alternative to natural gas in the region in which the AIM Project would be located, we find that the Project along with other planned natural gas projects such as the Atlantic Bridge Project would result in the displacement of some fuel oil use, thereby regionally offsetting some GHG emissions.

#### **4.13.9 Reliability and Safety**

Impact on reliability and public safety would be mitigated through the use of the PHMSA Minimum Federal Safety Standards in Title 49 CFR 192, which are intended to protect the public and to prevent natural gas facility accidents and failures. In addition, Algonquin's construction contractors would be required to comply with the OSHA Safety and Health Regulations for Construction in Title 29 CFR 1926. We received several comments about potential cumulative impacts relative to safety between the proposed Project and WPP's proposed West Point Transmission Project. We evaluated the risk associated with constructing and operating transmission lines and natural gas pipelines in close proximity in section 4.12.3. It is not uncommon for natural gas pipeline facilities to parallel existing utility rights-of-ways, including electric transmission rights-of-way and there are established methods for minimizing the risks of these configurations. Algonquin has conducted surveys and collected information on the location and size of existing power line structures within the proposed right-of-way corridors, tower footing locations and dimensions, and wire heights (lowest point between towers) and would design or modify its construction technique on the AIM Project with sufficient offsets to eliminate the risk of heavy construction equipment interfering with overhead high-voltage electric transmission lines during construction and operation. Where possible, Algonquin would offset its pipeline trench by 50 feet to avoid any potential damage to electric transmission towers; and in those areas that this offset could not be

achieved, the construction technique would be modified. Algonquin would use a licensed blasting engineer and would follow a Project-specific Rock Removal Plan that includes blasting procedures (see section 4.1.6) to avoid damage to overhead electric transmission lines and structures from blasting. To address potential effects on the pipeline from potential lightning strikes to nearby electric transmission towers, Algonquin would consult with an engineer that specializes in developing AC mitigation systems for pipeline utility companies. An AC mitigation system would be designed and installed to mitigate the steady state induced AC on the pipeline and deal with any fault current should one occur. Typically lightning arrestors along with decoupling devices would be employed on the pipeline to protect against any electrical surges.

Algonquin and WPP have corresponded and met regarding potential interactions (i.e., cumulative effects) and safety risks between Algonquin's proposed pipeline facilities and the WPP electric transmission line. Algonquin has committed to conducting an AC/DC interference study and incorporating field surveys and comprehensive modeling to identify potential adverse effects on the pipeline from stray currents and from inductive, conductive, and coupling AC/DC effects from nearby AC/DC utilities (see section 4.12.3). A properly designed natural gas pipeline and electric transmission line crossing or running parallel to each other, even at close distances, would not result in any cumulative operational or public safety hazards.

We also received comments about the potential for cumulative safety risks associated with the proximity of the pipeline to the IPEC nuclear facility. Section 4.12.3 of the EIS includes updated information that reflects the results of Entergy's Safety Evaluation for the AIM Project, which was filed with the NRC on August 21, 2014. As a result of consultation between Algonquin and Entergy, Algonquin has agreed to additional design and installation enhancements along approximately 3,935 feet of the AIM Project pipeline where it would lie closest to the IPEC facility (i.e., 0.5 mile from IPEC's security barrier). These measures are described in section 4.12.3. Entergy has concluded that, based on the proposed routing of the 42-inch-diameter pipeline further from safety-related equipment at IPEC, and accounting for the substantial design and installation enhancements agreed to by Algonquin, the proposed AIM Project poses no increased risks to IPEC and there would be no significant reduction in the margin of safety at the facility. The NRC conducted its own, independent review assuming a catastrophic pipeline failure, and concurred with these findings. As such, we find there would not be any significant cumulative impacts on safety or reliability associated with the proximity of the pipeline to the IPEC.

#### **4.13.10 Conclusion**

Recently completed, ongoing, and planned projects in the AIM Project area were identified for inclusion in this cumulative impact analysis (refer to table 4.13-1). The majority of cumulative impacts would be temporary and minor when considered in combination with past, present, and reasonably foreseeable activities. However, some long-term cumulative impacts would occur on wetland and forested and upland vegetation and associated wildlife habitats. Some long-term cumulative benefits to the community would be realized from the increased tax revenues. Short-term cumulative benefits would also be realized through jobs and wages and purchases of goods and materials. There is also the potential that the Project would contribute to a cumulative improvement in regional air quality if a portion of the natural gas associated with the AIM Project displaces the use of other more polluting fossil fuels. In summary, due to the implementation of specialized construction techniques, the relatively short construction timeframe in any one location, and carefully developed resource protection and mitigation plans designed to minimize and control environmental impacts for the AIM Project as a whole, minimal cumulative effects are anticipated when the impacts of the AIM Project are added to the identified ongoing projects in the immediate area.



## **5.0 CONCLUSIONS AND RECOMMENDATIONS**

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### **5.1 SUMMARY OF THE FERC STAFF'S ENVIRONMENTAL ANALYSIS**

The conclusions and recommendations presented in this section are those of the FERC environmental staff. Our conclusions and recommendations were developed with input from the EPA, USACE, and PHMSA, as cooperating agencies. The federal cooperating agencies may adopt the EIS per 40 CFR 1506.13 if, after an independent review of the document, they conclude that their permitting requirements and/or regulatory responsibilities have been satisfied. However, these agencies would present their own conclusions and recommendations in their respective and applicable records of decision or determinations. Otherwise, they may elect to conduct their own supplemental environmental analysis, if necessary.

We determined that construction and operation of the AIM Project would result in adverse environmental impacts. Most of these environmental impacts would be temporary or short-term during construction and operation, but long-term and potentially permanent environmental impacts on vegetation and individual wildlife species would also occur as part of the Project. However, if the proposed Project is constructed and operated in accordance with applicable laws and regulations, the mitigating measures discussed in this EIS, and our recommendations, most of these adverse impacts would be reduced to less than significant levels. This determination is based on a review of the information provided by Algonquin and further developed from data requests; field investigations; scoping; literature research; alternatives analysis; and contacts with federal, state, and local agencies as well as Indian tribes and individual members of the public. As part of our review, we developed specific mitigation measures that we determined would appropriately and reasonably reduce the environmental impacts resulting from construction and operation of the Project. Therefore, we are recommending that our mitigation measures be attached as conditions to any authorization issued by the Commission. A summary of the anticipated impacts from the Project and our conclusions regarding impacts are provided below by resource area.

#### **5.1.1 Geology and Paleontological Resources**

Construction and operation of the Project would not materially alter the geologic conditions of the Project area. The effects would mostly be limited to construction activities within the right-of-way resulting from grading and trenching operations. Algonquin would minimize the impacts on surface geology by returning contours to preconstruction conditions to the maximum extent practicable. This may not be the case at the aboveground facilities, where grading and filling may be required to create a safe and stable land surface to support the facility. The Project would not cross any active or proposed mines, but the West Roxbury Crushed Stone Quarry is located adjacent to the West Roxbury Lateral and M&R Station in Massachusetts. No direct conflicts were identified that would inhibit the construction of the Project or the continued day-to-day operation of this quarry. In addition, it should be noted that existing pipelines currently operate in Grove Street between the quarry and the proposed AIM Project facilities. We have found no evidence that these existing pipelines have been impacted by quarry activities.

The potential for geologic hazards to significantly affect construction or operation of the proposed Project facilities is low. The Project would not be located in a region that represents a serious seismic risk to the proposed facilities. The USGS has extensively studied the Ramapo Fault system and the level of seismicity in the region. The USGS's review indicates that there is no clear association between the fault and small earthquakes that do occur in the region. Further, there is insufficient geologic evidence to indicate the existence of a tectonic fault or Holocene-age slip or deformation associated with the fault. In any case, the design of the pipeline takes into consideration site-specific conditions, including earthquakes. The recorded magnitude of earthquakes in the Project area is relatively low and

the ground vibration would not pose a problem for a modern welded-steel pipeline. The proposed Project facilities would also be located in an area considered to have a low incidence of landslides. Flash flooding has the potential to occur in streams within the Project area, particularly in areas of higher relief and narrower stream valleys in Connecticut; however, no such features are located along the Project route or in proximity to any of the aboveground facilities. We conclude that subsidence due to karst conditions is not anticipated to be a concern for the Project due to the minimal occurrence of calcareous bedrock crossed by the Project and because no mapped karst features have been identified in the Project area.

The pipeline segments would traverse about 7.2 miles of shallow bedrock that may require blasting. In order to minimize potential impacts from blasting, Algonquin would comply with all federal, state, and local regulations for blasting and has developed an acceptable Rock Removal Plan to be used during construction.

With implementation of Algonquin's E&SCP, Rock Removal Plan, and the additional mitigation measures discussed above, impacts on geological resources would be adequately minimized and would not be significant.

### **5.1.2 Soils**

The Project would traverse a variety of soil types and conditions. Construction activities associated with the Project, such as clearing, grading, trenching, and backfilling, could adversely affect soil resources by causing erosion, compaction, and introducing excess rock or fill material to the surface. These effects could hinder restoration of the disturbed areas. Algonquin would implement the mitigation measures contained in its E&SCP to control erosion, enhance successful revegetation, and minimize any potential adverse impacts on soil resources. Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could also adversely affect soils. The effects of such contamination are typically minor because of the low frequency and volumes of spills and leaks. In addition, Algonquin has developed an acceptable SPCC Plan that specifies cleanup procedures to minimize the potential for soil contamination from spills or leaks of fuel, lubricants, coolants, or solvents.

Various locations with potential and/or known sources of soil contamination were identified in the vicinity of the proposed Project facilities in New York, Connecticut, and Massachusetts. To-date, Algonquin has determined that field sampling would be required at two locations (one in Connecticut and one in Massachusetts). The CTDEEP also identified a concern at a third site. To ensure that contamination in the Project area is accurately identified, we are recommending that Algonquin file a Field Sampling Plan for the identification of potential contaminated sites that may be encountered during construction. Excavated contaminated material would be managed in compliance with Algonquin's acceptable Unexpected Contamination Encounter Procedures, which specifies measures to ensure that contaminated material is managed in accordance with state and federal regulations. We received comments regarding the potential contamination of PCBs along the Hudson River. Utilizing the HDD method avoids disturbance to river-bottom sediments because all subsurface materials removed along the drill path during the drilling process are removed from the borehole and contained within temporary lined mud pits. Contamination is not expected to be encountered during HDD activities; however, due to the historic presence of PCBs in the area, we are recommending that all subsurface materials recovered from the Hudson River HDD process be appropriately sampled for PCBs prior to disposal of the material. If contamination is found, it should be handled as outlined in the Unanticipated Contamination Encounter Procedures.

With implementation of Algonquin's E&SCP, SPCC Plan, Unexpected Contamination Encounter Procedures, and our additional recommended mitigation measure, we conclude that impacts on soil resources would be adequately minimized.

### 5.1.3 Water Resources

Groundwater resources in the Project area are composed of unconsolidated glacial deposits of sand and gravel underlain by consolidated bedrock aquifer systems. The majority of the Project facilities are not located within a designated SSA. However, the Haverstraw to Stony Point Take-up and Relay segment would cross about 0.5 mile of the Ramapo River Basin SSA in New York. Comments were received on the draft EIS regarding the potential impacts on this aquifer associated with Project construction. AIM Project construction within the drainage basin would occupy only 6.4 acres over the 0.5 linear mile, or just 0.007 percent of the area covered by the drainage basin. The actual construction footprint that could potentially impact the aquifer itself occupies only 2.4 acres. The West Roxbury Lateral crosses a portion of the state-designated Charles River Basin aquifer in Massachusetts and the existing Wellesley M&R Station is also located within the Charles River Basin aquifer. Based on available information, 89 private domestic wells and a public well would be located within 150 feet of Algonquin's proposed construction work area. Two of the water supply wells would be located within the construction workspace.

Construction activities are not likely to significantly impact groundwater resources because the majority of construction would involve shallow, temporary, and localized excavation. These potential impacts would be avoided or minimized by the use of construction techniques described in Algonquin's E&SCP. The two domestic wells that would be located within the construction workspace would be protected by safety fencing during construction. Algonquin would contact any landowner with water supply wells within 150 feet of the construction workspace and offer to conduct pre- and post-construction monitoring of well yield and water quality. If a water supply well is damaged as a result of Project construction, Algonquin would ensure that a temporary source of water is provided until the damaged water well is restored to its preconstruction capacity and quality, a replacement water source would be provided, or the landowner would be fairly compensated for damages. We are recommending that Algonquin file a report that identifies whether any water supply wells were impacted during construction and how it resolved those impacts. Algonquin would also implement the measures in its SPCC Plan to minimize the potential for groundwater impacts associated with an inadvertent spill of hazardous materials.

Algonquin has indicated that there are two sites within the Project area (one in Connecticut and one in Massachusetts) where existing groundwater contamination could be encountered during construction. The CTDEEP has also identified a concern at a third site. These sites would be included in the Field Sampling Plan discussed above. We also received scoping comments related to existing groundwater contamination at the IPEC site. A hydrogeological analysis of groundwater movement at the site demonstrated that the proposed AIM Project facilities would not interact with radiologically contaminated groundwater at the IPEC site. Impacts associated with unexpected contaminated groundwater would be avoided or minimized by following the procedures outlined in Algonquin's Unexpected Contamination Encounter Procedures.

Algonquin conducted a review of each of the proposed HDD entry/exit locations, including the modified location on the west side of the river, and found no documented groundwater contamination. Therefore, contamination is not expected to be encountered during HDD activities. We conclude that potential impacts on groundwater resources would be avoided, minimized, or mitigated.

The Project would cross 102 waterbodies, including 36 perennial streams, 62 intermittent streams, 3 ephemeral streams, and a ponded area. The Hudson River is also the only major waterbody (greater than 100 feet wide) crossed by the Project. No waterbodies would be impacted by the work at the existing and proposed aboveground facilities. Five waterbodies would be crossed by the existing access roads. None of the proposed crossings are designated as EFH, though the proposed Hudson River crossing is located north of a designated EFH area. Thirty of the Project waterbody crossings support fisheries of special concern and eight waterbodies are waters with naturally occurring spawning populations of trout. The Hudson River is the only waterbody within the Project area that contains threatened and endangered species and anadromous fisheries.

The Hudson River and Interstate 84/Still River would be crossed using the HDD method. We are recommending that in the event of an unsuccessful HDD, Algonquin should file with the Secretary an alternative site-specific plan for the crossing of the waterbody, which includes scaled drawings identifying all areas that would be disturbed by construction. Algonquin would file this plan concurrent with the submission of its application to the USACE and other applicable agencies for a permit to construct using this alternative crossing plan.

At both crossings, Algonquin anticipates using the intersect method to complete the pilot hole and has developed an acceptable BPD Plan that describes how the HDD operations would be monitored and measures that it would implement to minimize the potential for inadvertent returns and releases at these two locations. If an inadvertent release were to occur, the appropriate measures outlined in Algonquin's BDP Plan would be implemented to minimize any resulting impacts. Algonquin has indicated that additional investigation would be required to verify the existence, type, and depth of any existing bridge foundations where the Interstate 84/Still River HDD alignment would cross Ridgebury Road. Therefore, we are recommending that Algonquin provide a revised plan for the Interstate 84/Still River crossing if additional measures are needed to address any existing bridge foundations associated with the alignment across Ridgebury Road. Based on our assessment of the geotechnical conditions at the proposed HDD crossings, we conclude that with the implementation of our recommendation and the mitigation measures Algonquin proposes to employ, impacts associated with these crossings would be sufficiently avoided or mitigated.

Algonquin proposes to construct the remaining waterbody crossings using a dry construction technique (i.e., dam and pump, and/or flume) to minimize soil erosion and sedimentation downstream. Temporary construction-related impacts associated with the dry crossing method would be limited to short periods of increased turbidity before and after installation of the pipeline. Use of the measures identified in the E&SCP would minimize these potential short- and long-term impacts, including minimization of clearing of streamside vegetation, installation and maintenance of temporary and permanent erosion controls, and minimization of the duration of in-stream construction.

The Project has the potential to impact the watersheds that supply water to the New York City metropolitan area including the Croton, the Catskill, and the Delaware Water Supply Systems. The Croton Watershed would be crossed by the Stony Point to Yorktown Take-up and Relay segment between MPs 10.0 and 12.3 in the Town of Cortlandt and by the Southeast to MLV-19 Take-up and Relay segment between MPs 0.0 and 0.1 in the Town of Southeast. In addition, the proposed Stony Point to Yorktown Take-up and Relay segment crosses the Catskill Aqueduct near MP 10.3. During the scoping process and in response to the draft EIS, we received several comments about the Project's impact on the aqueduct. Algonquin would remove its existing 26-inch-diameter pipeline and casing, but not disturb the existing protective concrete slab, pending concurrence from the NYCDEP. Algonquin would build the proposed 42-inch-diameter pipeline above the aqueduct at a 50-foot offset from the existing line. This offset would provide sufficient vertical clearance between the new pipeline and the Catskill Aqueduct. Algonquin would also sequence construction activities to minimize the amount and duration of an open

right-of-way within the watershed. Algonquin would use a separate construction crew to work in the 2.3-mile-long stretch within the watershed and has also committed to an environmental inspection and compliance monitoring program to monitor and enforce compliance with all permit conditions to protect the environment during construction. Algonquin is also working with the NYCDEP to develop a SWPPP that addresses NYCDEP's requirements for constructing within a New York City watershed.

NYSDEC was particularly concerned about trench dewatering and requested that Algonquin commit to isolating shorter portions of trench to reduce the volume of trench water that would need to be handled at one time. Algonquin has provided typical designs for proposed trench dewatering structures and committed to using an alternative trench dewatering structure that involves a geotextile floor surrounded by a minimum of one row of staked hay bales installed around the perimeter of a filter bag dewatering location. This would provide additional filtration at specific locations if the EI determines the filter bag dewatering structure alone is not adequate. Algonquin also indicated that the amount of trench dewatering would be minimized by limiting the amount of open trench or by installing soil plugs in the open trench to isolate the trench length in need of dewatering in a specific work area.

There are nine streams with shallow bedrock that may require blasting during Project construction. Only two of these streams, Susquetonscut Brook and an Unnamed Tributary to Stony Brook, contain fisheries of special concern. Algonquin has committed to perform in-stream work in these streams during the appropriate timing windows for warmwater and coldwater fisheries. Also, in accordance with the FERC Procedures, Algonquin would need to file with the Secretary a schedule identifying when blasting would occur within each waterbody greater than 10 feet wide and within any designated coldwater fishery.

Pipeline construction activities affecting surface waters would be conducted in accordance with Algonquin's E&SCP; SPCC Plan; Unexpected Contamination Encounters Procedures; Rock Removal Plan; BDP Plan; and construction stormwater plans and permits, including the SWPPP being developed in consultation with the NYCDEP to address concerns about crossing New York City watersheds. We conclude that with these measures, along with our additional recommended mitigation measures, impacts on surface waters would be effectively minimized or mitigated, and would be largely temporary in duration.

Algonquin is proposing to use both surface water and municipal water sources for hydrostatic testing and municipal water for HDD operations. Algonquin estimates a need for a total of about 10,082,645 gallons of water to conduct the hydrostatic testing of pipeline segments and aboveground facilities. Of this total, about 9,610,245 gallons is required for testing pipeline segments and 472,400 gallons is required for testing aboveground facilities.

Impacts associated with the withdrawal and discharge of water would be effectively minimized by the implementation of the mitigation measures outlined in Algonquin's E&SCP and in accordance with all applicable permits. Algonquin is not proposing to use any chemicals for testing or for drying the pipeline following hydrostatic testing. Accidental spills during construction and operation would be prevented or adequately minimized through implementation of Algonquin's SPCC Plan. Based on the avoidance and minimization measures developed by Algonquin, we conclude that the Project would not have adverse impacts on groundwater or surface water resources due to hydrostatic testing activities.

#### **5.1.4 Wetlands**

Construction of the Project would temporarily impact 52.5 acres of wetlands, about 23.9 acres in New York and 28.6 in Connecticut. There would be no wetland impacts in Rhode Island or Massachusetts. Of the total wetland acreage, approximately 35.5 acres (68 percent) would involve

herbaceous and shrub-scrub wetlands, and the remaining 17.0 acres (32 percent) would involve forested wetlands. About 2.4 acres of the forested wetlands would be permanently converted to non-forested wetlands during operation of the pipeline facilities. The remaining 14.6 acres of forested wetlands would eventually revert to preconstruction conditions following construction. No wetlands would be affected at any of the aboveground facility sites or access roads. In areas where wetlands are adjacent to an existing access road, construction crews would avoid the wetland. The Project would not result in any permanent loss of wetlands. In addition, two vernal pools would be located within the temporary construction area for the Project facilities in New York.

Secondary or indirect impacts could include reduced riparian buffers, disturbance to adjacent habitats, and incremental fragmentation of forested wetlands. In its comments on the draft EIS, the EPA requested additional detail be provided on the types and amounts of secondary impacts on wetlands. In consultation with the USACE, NYSDEC, and CTDEEP, Algonquin calculated potential secondary impact edge effects on wetlands. A total of about 0.8 acre of secondary impacts were identified in New York. Also, a total of 1.9 acres of secondary PEM impacts and 16.3 acres of secondary PSS/PFO impacts were identified in Connecticut. Overall, secondary or indirect impacts would be minimized to less than significant levels through use of our Procedures and Algonquin's Project-specific E&SCP. As most of the facilities affecting wetlands would be installed within Algonquin's existing right-of-way, only incremental fragmentation, for example, would occur within PFO wetlands as a result of expanding the existing right-of-way and no new fragmentation would occur in these areas. Importantly, the Project would move the edge, but would not create new edge.

The construction right-of-way width in wetlands would generally be 75 feet wide, except in areas where additional width has been requested by Algonquin. Based on our review, we determined that these requests are justified. In accordance with the FERC Procedures, when wetlands are dry enough to support skids and pipe, the pipeline would be assembled in the wetlands. In these instances, Algonquin proposes to excavate the trench prior to the pipeline assembly. This would involve excavating a trench to remove the existing pipe followed by the removal of the pipe. The removed pipe would then be transported away from the construction work area. The removal activity would be conducted using a distinct construction crew separate from the pipeline installation crew. As the assembly-line construction process continues forward, the pipeline installation crew would expand the trench wider and deeper (as appropriate) to accommodate the new, larger diameter pipeline and install the replacement pipe at about the same location as the existing pipe using standard construction methods. In all wetland areas regardless of type, the existing pipeline must be removed first using wetland crossing procedures (e.g., topsoil/subsoil segregation, use of mats, etc.). Therefore, we agree that section VI.B.2.d of our Procedures would not apply to the take-up and relay segments of the Project. However, due to the potential for water quality effects on wetlands from erosion and sedimentation, we are recommending that, during construction along the take-up and relay portions of the Project, all erosion control devices and sediment barriers be inspected on a daily basis even when active construction and/or equipment operation is not occurring at a specific wetland location.

Construction and operation-related impacts on wetlands and vernal pools would be mitigated by implementing the wetland protection and restoration measures contained in Algonquin's E&SCP, Invasive Plant Species Control Plan, and any additional conditions of the wetland permits that could be issued by the USACE, NYSDEC, and CTDEEP. This includes Algonquin committing to provide compensatory mitigation for the permanent conversion of 0.8 acre of forested wetlands to a non-forested wetland type in New York and 1.6 acres of forested wetlands to a non-forested wetland type in Connecticut. Algonquin's implementation of a final, agency-approved Wetland Mitigation Plan would further offset any adverse impacts on wetland functions that would result from the permanent conversion of these wetlands. The USACE, NYSDEC, and CTDEEP would review and incorporate the final plan into project permits. We are recommending that Algonquin identify any additional avoidance or

mitigation measures for the two vernal pools through the permit review process with the applicable agencies.

Based on the avoidance and minimization measures developed by Algonquin, as well as our recommendations, we conclude that impacts on most wetland resources would be minimal and would be temporary in duration. We further conclude that by Algonquin's implementation of their final, agency-approved Wetland Mitigation Plan, it would further offset any adverse impacts on wetland functions that would result from the permanent conversion of PFO wetlands to a non-forested wetland type.

### **5.1.5 Vegetation**

Impacts on vegetation from the proposed Project would range from short-term to permanent due to the varied amount of time required to reestablish certain community types, as well as the maintenance of grassy vegetation within the permanent right-of-way and the conversion of aboveground facility locations to non-vegetated areas. Construction of the proposed Project facilities would temporarily disturb about 352.4 acres of vegetation (160.9 acres of open land and 191.5 acres of forested vegetation) and permanently affect 34.7 acres (7.7 acres of open land and 27.0 acres of forested vegetation). The Project would also affect vegetation communities of special concern, including chestnut oak forests.

The greatest impact on vegetation would be on forested areas because of the time required for tree regrowth in all temporary workspace back to preconstruction condition. Algonquin would limit the amount of disturbance to chestnut oak forests, which are considered a significant natural community in New York, by utilizing the existing pipeline right-of-way during construction to the extent possible. Construction in forest lands would remove the tree canopy over the width of the construction right-of-way, which would change the structure and local setting of the forest area. The regrowth of trees in the temporary workspaces would take years and possibly decades. Moreover, the forest land on the permanent right-of-way would be permanently impacted by ongoing vegetation maintenance during operations, which would preclude the re-establishment of trees on the right-of-way. However, the Project would not contribute significantly to forest fragmentation. Much of the proposed pipeline routes are located along existing rights-of-way and in areas that are already developed and highly fragmented. As a result, the forested areas that are present are predominantly edge habitats that are unlikely to support forest interior species.

Multiple invasive species have been identified throughout the Project area. Algonquin would implement its Invasive Plant Species Control Plan to address the spread of invasive plants within the Project rights-of-way and control invasive populations that might prevent successful revegetation. Algonquin is also working with the USACE and CTDEEP on an approach to managing invasive species in Connecticut. This management would include preconstruction mowing, construction phase mitigation measures, post-construction monitoring, and post-construction management. A final management plan would be filed with the USACE and CTDEEP through the permitting process.

Following construction, all disturbed areas would be restored. The impact of the Project on open lands would be short term, as these areas would recover within one to two growing seasons. Construction of the proposed pipeline facilities would have a long-term effect on forested wetland and upland vegetation within the construction right-of-way. Maintenance activities would result in permanent conversion of some areas of existing upland forested vegetation to herbaceous or scrub-shrub vegetation. However, because Algonquin has routed the pipeline facilities to use existing utility rights-of-way and road corridors to the extent possible, impacts on forested vegetation would be minimized. We find that Project-specific minimization and mitigation measures, and mitigation measures described in Algonquin's E&SCP and Invasive Plant Species Control Plan would be sufficient to offset adverse impacts on

vegetation in the Project area. Therefore, we have concluded that constructing and operating the pipeline facilities would not significantly affect existing vegetation populations.

#### **5.1.6 Wildlife and Aquatic Resources**

The Project could have both direct and indirect impacts on wildlife species and their habitats. Direct impacts of construction on wildlife include the displacement of wildlife from the right-of-way or work sites into adjacent areas and the potential mortality of some individuals. The cutting, clearing, and/or removal of existing vegetation within the construction work area could also affect wildlife by reducing the amount of available habitat for nesting, cover, and foraging. Indirect effects of construction could include lower reproductive success by disrupting courting, nesting, or breeding of some species, which could also result in a decrease in prey available for predators of these species. Some of these effects would be temporary, lasting only while construction is occurring, or short-term, lasting no more than a few years until the preconstruction habitat and vegetation type would be reestablished. Other impacts would be longer term such as the re-establishment of forested habitats, which could take decades. Algonquin proposed several measures to minimize or avoid impacts on wildlife and aquatic resources, including collocating the majority of pipeline facilities within or adjacent to existing rights-of-way to the maximum extent possible, using the HDD crossing method at the Hudson River crossing to avoid direct effects to aquatic habitats and adjacent riparian habitats, and treating all vernal pools as wetlands and protecting them through adherence to the measures outlined in Algonquin's E&SCP and any permit conditions developed through consultation with the applicable federal and state agencies.

Algonquin has routed the pipeline to minimize impacts on sensitive wildlife habitats, such as the Lower Hudson River IBA, Harriman State Park, and Blue Mountain Reservation. Algonquin continues to consult with the NYSOPRHP and PIPC to address impacts on Harriman State Park. Given that consultation with NYSOPRHP and PIPC is not complete, we are recommending that Algonquin provide a site-specific plan that includes any avoidance and mitigation measures developed for Harriman State Park through consultation with these agencies.

In an effort to minimize permanent effects on wildlife and to promote the rapid stabilization and revegetation of the disturbed areas, Algonquin would comply with its E&SCP to minimize disturbance to vegetation and provide for stabilization of affected areas to mitigate direct and indirect effects on wildlife. Revegetation would be completed in accordance with permit requirements and consultation with agency and non-agency stakeholders affected by the Project. In addition, maintenance clearing would not be conducted between April 15 and August 1 to avoid direct and indirect effects on wildlife during the nesting and breeding season (e.g., grassland birds). In wetland areas, trees located within 15 feet of either side of the pipeline that are greater than 15 feet in height may be selectively cut and removed from the right-of-way. However, trees and shrubs that become reestablished beyond 15 feet on either side of the pipeline in wetlands would not be disturbed. Algonquin would also retain a riparian strip within 25 feet of a stream as measured from the mean high water mark. This riparian area would be allowed to permanently revegetate with native woody plant species across the entire right-of-way, with exception of a 10-foot-wide corridor centered on the pipeline that would be maintained in an herbaceous state. In the riparian area, trees and shrubs greater than 15 feet in height may also be selectively cut within 15 feet on either side of the pipeline.

All waterbodies crossed by the pipeline are classified as warmwater or coldwater fisheries with the exception of the Hudson River and Dickey Brook, which support estuarine fisheries. In-stream pipeline construction across waterbodies could have both direct and indirect effects on aquatic species and their habitats, including increased sedimentation and turbidity, alteration or removal of aquatic habitat cover, stream bank erosion, impingement or entrainment of fish and other biota associated with the use of water pumps, downstream scouring, and the potential for fuel and chemical spills.



Algonquin would minimize the effects of its Project on aquatic resources through the use of dry crossing methods, construction timing windows, and restoration procedures. In accordance with the FERC Procedures, Algonquin would conduct in-water work, except that required to install or remove equipment, outside of the cold water fisheries timing restriction window (June 1 through September 30) unless expressly permitted or further restricted by the appropriate federal or state agency in writing on a site-specific basis. The HDD method would be used to cross the Hudson and Still Rivers. Use of the HDD method would avoid any in-stream impacts on these waterbodies. Algonquin would also implement the erosion and sedimentation control measures described in its E&SCP to contain materials within the construction work areas and minimize impacts on fisheries due to changes in water quality. Once construction is complete, streambeds and banks would be quickly restored to preconstruction conditions to the fullest extent possible. Restoration, bank stabilization, and revegetation efforts, which are defined in the AIM Project E&SCP, would minimize the potential for erosion from the surrounding landscape.

Some limited blasting in waterbodies could be required along the AIM Project pipeline segments. Algonquin would mitigate the effects of blasting on fish species by having the blasting contractor use delays and stemming to dampen the shock wave. The nature of the material that would require blasting and the short duration of blasting activities would help minimize the amount of fine-grained material released to the aquatic habitat, which would also minimize blasting-related effects of fish. Algonquin would file a schedule with FERC identifying when blasting would occur within each waterbody greater than 10 feet wide and within any designated coldwater fishery, and provide the schedule to the applicable agencies. Algonquin would also implement the measures identified in its Rock Removal Plan.

Algonquin would ensure that hydrostatic test water appropriations and discharges would not result in a significant entrainment of fish, loss of habitat, or an adverse effect to water quality. Discharge would comply with regulatory permit conditions and be controlled to prevent scour and sedimentation, flooding, or the introduction of foreign or toxic substances into the aquatic system. Algonquin would minimize the potential for spills to impact aquatic resources by implementing the measures contained in its SPCC Plan.

Through consultation with NOAA Fisheries, we have determined that the only waterbody crossing where EFH species could potentially occur is the Hudson River. Given the proposed use of the HDD construction method, implementation of Algonquin's proposed BDP Plan, and the fact that no water would be withdrawn from the Hudson River to support Project construction, we conclude that the Project would have minimal, if any, adverse effects on EFH or managed species. NOAA Fisheries has concurred with this assessment. We have also determined that the Project would have no effect on marine mammals protected under the Marine Mammal Protection Act because they are not anticipated to occur within the Project area of the Hudson River.

Given the impact avoidance, minimization, and mitigation measures proposed by Algonquin, we conclude that the Project would not result in substantial adverse impacts on wildlife and aquatic resources.

### **5.1.7 Special Status Species**

To comply with Section 7 of the ESA, we consulted either directly or indirectly (through Algonquin's informal consultation) with the FWS, NOAA Fisheries, and state resource agencies regarding the presence of federally listed, proposed for listing, or state-listed species in the Project area. NOAA Fisheries identified two federally listed threatened or endangered species (Atlantic and shortnose surgeon) under their jurisdiction that are known to occur in the Hudson River within the Project area. The FWS identified seven federally listed threatened or endangered species (piping plover, roseate tern, Puritan tiger beetle, Indiana bat, bog turtle, northern red-bellied cooter, and small whorled pogonia), as

well as one candidate species (New England cottontail) and one species proposed for listing as endangered (northern long-eared bat) that are known to occur in the Project area.

Based on these consultations, we determined that construction and operation of the AIM Project would have *no effect* on the shortnose sturgeon, Atlantic sturgeon, piping plover, roseate tern, Puritan tiger beetle, northern red-bellied cooter, and small whorled pogonia; *may affect, but would not likely adversely affect* the bog turtle and Indiana bat; and would *not likely jeopardize the continued existence* of the New England cottontail and the northern long-eared bat.

NOAA Fisheries concurred with our determination for the Atlantic and shortnose sturgeon and consultation is complete. The FWS has concurred with our determination for the piping plover, roseate tern, Puritan tiger beetle, northern red-bellied cooter, small whorled pogonia, bog turtle, Indiana bat, northern long-eared bat, and the New England cottontail, and consultation is complete for these species as well.

The potential impact of the Project on migratory birds, including BCC-listed birds, would include the temporary and permanent loss of habitat associated with the removal of existing vegetation during construction. The Haverstraw to Stony Point Take-up and Relay segment would run adjacent to and across a section of the Harriman and Sterling Forests IBA in Rockland County, New York. About 15.3 acres of forested land would be affected by this segment. The Stony Point to Yorktown Take-up and Relay segment would involve 72.7 acres of tree clearing where it diverges from Algonquin's existing rights-of-way in Rockland and Westchester Counties, New York. The Project has been designed to minimize potential impacts on migratory birds and Algonquin would take other measures during Project construction and operation to limit migratory bird impacts. Algonquin would conduct surveys prior to clearing along the 4.9-mile West Roxbury Lateral in Massachusetts. Excluding the proposed West Roxbury Lateral, 94 percent of the proposed pipeline facilities are located within or adjacent existing pipeline corridors, and other utility rights-of-way. Thus, tree-clearing activities would be limited in scope and spread over the entire Project area. We find that these measures would minimize the effects of the Project on birds of conservation concern and other migratory birds. The FWS confirmed that Algonquin's proposed measures are sufficient for minimizing impacts on migratory birds and consultation for migratory birds protected under the MBTA is complete.

Bald eagles are known to occur in portions of Rockland and Westchester Counties in New York. The Lower Hudson River IBA located in these counties is an important wintering and breeding area for bald eagles in New York State, and the NYSDEC identified the area in and around the Hudson River as their main area of concern for the Project. Additionally, wintering roost locations occur in and around the proposed crossing location of the Stony Point to Yorktown Take-up and Relay including (but not strictly limited to) Bear Mountain, the Hudson River shoreline, Lake Meahagh, and Iona Island.

During the surveys conducted in March and April 2014, no bald eagle nests were observed within 0.5 mile of the Hudson River crossing area, and the closest active nest is located more than 6,000 feet south of the proposed crossing location. We have concluded, and the FWS concurs, that the Project would not result in harm to bald eagles. Algonquin continues to consult with the NYSDEC to discuss survey results and state-level concerns for bald eagles, and develop and implement any state-level avoidance and mitigation measures, including timing restrictions, as necessary, to avoid impacts on bald eagles.

In addition to the federally listed and proposed species, 29 state-listed threatened, endangered, or special concern species were identified as potentially occurring in the New York and Connecticut sections of the Project area. No state-listed species would be affected in Rhode Island or Massachusetts. According to NYSDEC, timber rattlesnakes (a state-listed threatened species) are known to occur within

the Project area. Algonquin continues to consult with the NYSDEC to discuss the results of the timber rattlesnake habitat assessment survey and determine the appropriate conservation measures to address the potential occurrence of timber rattlesnakes in the Project area and their habitat adjacent to Algonquin's right-of-way. We are recommending that Algonquin file all permit requirements and avoidance or mitigation measures developed in consultation with the NYSDEC.

Based on the information provided by Algonquin and comments provided to FERC from the CTDEEP on the draft EIS, we conclude that the Project would not affect Connecticut state-listed plants because Algonquin would implement protective measures for species identified near the Project area, including the climbing fern and field paspalum. Based on the same information sources and Algonquin's proposed conservation measures for several Connecticut state-listed animals, we have concluded that the Project would not affect the American bittern, pied-billed grebe, savannah sparrow, red bat, eastern cougar, and ground beetle; and would not have a significant effect on the American kestrel, eastern box turtle, eastern hognose snake, Jefferson salamander "complex," and pine barrens tiger beetle.

### **5.1.8 Land Use, Recreation, Special Interest Areas, and Visual Resources**

Construction of the Project would affect about 575.6 acres. Approximately 78 percent of this acreage would be utilized for the pipeline facilities. Of the remaining acreage impacted, 16 percent would be associated with the aboveground facilities, 5 percent would be for the pipe and contractor ware yards, and less than 1 percent would be for access roads. The primary land use types impacted during construction would be forest/woodland (33 percent), open land (28 percent), industrial/commercial land (26 percent), and residential land (9 percent). Agricultural land and open water would make up the remaining 4 percent of land types impacted during construction of the proposed Project.

During operation, the permanent pipeline right-of-way, aboveground facilities, and permanent access roads would newly encumber about 42.4 acres of land. The primary land use types that would be permanently encumbered would be forest/woodland (64 percent), open land (18 percent), industrial/commercial (7 percent), and agricultural land (7 percent). Open water and residential land would make up the remaining 4 percent of permanent impacts. To facilitate pipeline inspection, operation, and maintenance, the entire permanent right-of-way in upland areas would be maintained in an herbaceous/scrub-shrub vegetated state. This maintained right-of-way would be mowed no more than once every 3 years, but a 10-foot-wide strip centered over the pipeline may be mowed annually to facilitate operational surveys.

Algonquin's proposed construction work areas would be located within 50 feet of 332 residential structures (i.e., houses and apartment buildings) and 94 non-residential structures (i.e., commercial or industrial facilities, sheds, garages). To address impacts on residences within 50 feet of construction work areas, Algonquin developed Residential Construction Plans to inform affected landowners of proposed measures to minimize disruption and to maintain access to the residences during construction. We have reviewed the revised Residential Construction Plans submitted on September 29, 2014 and conclude that the plans are sufficient to minimize, to the extent possible, potential impacts on residences within 10 feet of the construction workspace and are acceptable overall. However, we are recommending that Algonquin provide a revised set of Residential Construction Plans that incorporate and address any comments Algonquin received from affected landowners, prior to construction. Following construction, all residential areas would be restored to preconstruction conditions or as specified in written landowner agreements.

Several planned residential and commercial developments were identified within 0.25 mile of AIM Project facilities. However, most would not be crossed by any Project facilities and would not experience any direct effects. Algonquin would continue to coordinate with the developers and

permitting authorities of the developments crossed to identify and address any potential construction-related indirect effects.

In general, Project impacts on recreational and special interest areas would be temporary and limited to the period of active construction, which typically lasts only several days to several weeks in any one area. These impacts would be minimized by implementing the measures in Algonquin's E&SCP, traffic management plans, Fugitive Dust Control Plan, as well as measures to ensure that noise is mitigated. Areas requiring additional site-specific considerations, such as Harriman State Park, Camp Bullowa, and Sylvan Glen Tower Reserve, would be mitigated with appropriate monitoring, use of safety devices, and signage. As mitigation for crossing the Blue Mountain Reservation, Algonquin would pay rent to Westchester County for its ATWS, and would pay compensation for trees removed along the right-of-way. Algonquin developed site-specific measures to further minimize impacts on the Buchanan-Verplanck Elementary School in New York; Dodd Stadium in Norwich, Connecticut; the Norfolk Golf Club in Westwood, Massachusetts; Gonzalez Field in Dedham, Massachusetts; and St. Theresa of Avila School in West Roxbury, Massachusetts, all of which would sufficiently minimize impacts on these areas. Algonquin also developed site-specific measures to minimize impacts on St. Patrick's Church in Verplanck, New York; however, we are recommending that a revised site-specific plan be developed incorporating additional mitigation measures. With implementation of the measures proposed by Algonquin, and our additional recommendation, we conclude that impacts on these recreation and public interest areas would be adequately avoided and minimized.

Visual resources along the proposed pipeline routes are a function of geology, climate, and historical processes, and include topographic relief, vegetation, water, wildlife, land use, and human uses and development. The majority of the proposed pipeline facilities (approximately 93 percent) would be installed within or adjacent to existing pipeline, roadway, railway, and/or other utility rights-of-way. As a result, the visual resources along the majority of the Project have been previously affected by pipeline or other operations.

The new aboveground facilities associated with the AIM Project would be the most visible features and would result in long-term impacts on visual resources. Only minor, temporary construction disturbance would occur outside the existing fence line for the modified aboveground facilities. New aboveground facilities for the AIM Project would include three new M&R stations. With the exception of the West Roxbury M&R Station, the new M&R stations would be constructed adjacent to existing facilities so no new impacts on visual resources would occur. At the West Roxbury M&R Station, Algonquin would maintain an existing wooded buffer to minimize impact on visual resources in the area. However, due to the location of the site in a dense residential area, visual impacts from the construction and operation of the station could occur. We are recommending that Algonquin file a detailed site-specific landscaping plan for mitigation of visual impacts at the station prior to construction.

A new launcher/receiver and pressure regulating facility would be constructed and operated at MP 12.3 on a parcel within Granite Knolls West. The installation of the launcher/receiver facility on the west side of Stony Street would introduce a new, low profile visual impact in a viewshed otherwise unaffected by aboveground structures. The launcher/receiver facility may be visible to passing motorist and pedestrians on or adjacent to Stony Street but would not have a significant impact on the overall visual character of the parks.

With adherence to Algonquin's proposed impact avoidance, minimization, and mitigation plans, and our recommendations, we conclude that overall impacts on land use and visual resources would be adequately minimized.

### 5.1.9 Socioeconomics

Construction of the AIM Project would not have a significant adverse impact on local populations, housing, employment, or the provision of community services. Secondary socioeconomic effects include increased sales and property tax revenue, job opportunities, income associated with local construction employment, increased vehicle traffic, and impacts on roads.

There would be temporary to short-term increases in traffic levels due to the commuting of the construction workforce to the area of the Project as well as the movement of construction vehicles and delivery of equipment and materials to the construction work area. To address traffic impacts related to road crossings and in-street construction in densely populated areas, Algonquin has prepared separate Traffic Management Plans for the West Roxbury Lateral and pipeline segments in New York. The plans include measures to address motor vehicles, including parking, and considerations for pedestrians, bicycles, and construction workers during construction. We have reviewed these plans and found them acceptable with the exception of a portion of the Traffic Management Plan for the New York pipeline segments. Several road crossings in New York were identified as needing further site-specific details; therefore, we are recommending that Algonquin provide a revised plan that includes the site-specific details for these crossings prior to construction.

Impacts on traffic during construction along the West Roxbury Lateral would result in significant adverse impacts at one intersection. However, with the implementation of Algonquin's Traffic Management Plan for the West Roxbury Lateral, impacts resulting from in-street construction would be minimized to the extent possible and would be reduced to less than significant levels at all other locations along the West Roxbury Lateral. Algonquin's traffic management plans continue to be refined pursuant to input from the municipalities. Prior to constructing across town roads, further refinements are expected based on the municipality conditions, which often depend on the time period proposed for construction. Algonquin has indicated that the details of working hours and times and dates of restricted work hours would be developed with local municipalities as part of the road operating permits or other similar approvals. We are recommending that Algonquin develop a detailed construction schedule for each segment of the West Roxbury Lateral that includes the proposed construction timeframes, working hours, and times and dates of any restricted work hours. The detailed construction schedules would be shared with each affected municipality and updated on a biweekly basis and included in Algonquin's required construction status reports. After construction, Algonquin has committed to repaving the Town of Dedham's roadways affected by pipeline construction from curb-to-curb. No impacts on traffic would occur during operation of the Project.

We received some comments regarding the potential effect of the Project on property values. Algonquin would acquire easements for both the temporary (construction) and permanent rights-of-way where applicable. With the exception of the West Roxbury Lateral, most of the remaining pipeline segments would be installed within Algonquin's existing right-of-way and would replace existing pipeline. Algonquin would compensate the landowners for any new easements, the temporary loss of land use, and any damages. Several studies have looked at the effect of pipelines on sales and property values. We acknowledge that most were conducted on behalf of the project developers. However, our analysis did not identify any relevant studies to refute their conclusions. Similarly, regarding the potential impacts on mortgage rates associated with pipeline proximity, we are not aware of any practice by mortgage companies to re-categorize properties nor are we aware of federally insured mortgages being revoked based on proximity to pipelines. In relation to the AIM Project, the existing pipelines have been in place for over 50 years and, according to Algonquin, new residences have been built closer to the existing pipelines since the 1950s without property values or mortgage concerns being raised. We conclude that the AIM Project would not negatively impact property values or influence mortgage rates outside of the pipeline rights-of-way or aboveground facility boundaries.

The primary impacts on the environmental justice communities in both Connecticut and Massachusetts associated with the construction of the AIM Project would be the temporary increases in noise, dust, and traffic from Project construction. These impacts would occur along the entire pipeline route and in areas with a variety of socioeconomic backgrounds. As part of the Project, Algonquin would implement a series of measures to minimize such impacts. Conversely, the AIM Project would bring economic benefits to the region via added tax revenues and jobs associated with construction and operation of the pipeline facilities in these and other areas along the right-of-way. Based on our research and analysis, there is no evidence that the Project would result in disproportionately high and adverse health or environmental effects on minority or low-income communities. In its comments on the draft EIS, the EPA concurred with this determination. However, Algonquin has agreed to prepare fact sheets in Spanish to be posted on the Project website and would prepare notices regarding public meetings and, in the future, notices regarding construction information in Spanish for the identified communities.

Construction of the Project would result in minor positive impacts due to increases in construction jobs, payroll taxes, purchases made by the workforce, and expenses associated with the acquisition of material goods and equipment. Operation of the Project would have a minor to moderate positive effect on the local governments' tax revenues due to the increase in property taxes that would be collected.

#### **5.1.10 Cultural Resources**

Algonquin conducted archival research and walkover surveys of the proposed Project area to identify historic aboveground properties and locations for additional subsurface testing in areas with potential for prehistoric and historic archaeological sites. Algonquin then conducted field surveys for aboveground properties and archaeological sites. Algonquin identified a total of 43 archaeological sites within the Project's APE. Of these, 28 require additional testing to determine eligibility for listing on the NRHP; 13 are not eligible; 1 is eligible for listing but would be avoided by the Project; and 1 is listed on the NRHP but would also be avoided by the Project. In addition, 388 historic aboveground resources were identified within the APE, the majority of which (359) are not eligible for listing on the NRHP and no further work is recommended. The Project would not result in any adverse effects on the remaining 29 identified historic aboveground resources.

We consulted with nine tribes to provide an opportunity to identify any concerns about properties of traditional religious or cultural significance that may be affected by this undertaking. Eight of the tribes have contacted FERC staff to express an interest in the Project, request additional information, request to be kept apprised of the Project, and/or to accompany the archaeological field crews. In addition, four tribes have been participating in regular conference calls hosted by FERC staff. Consultations with several other governmental organizations, non-governmental organizations, non-federally recognized tribes, and municipal historic preservation commissions in New York and Massachusetts were also conducted to provide them an opportunity to comment on the proposed Project.

Algonquin has prepared procedures to be used in the event any unanticipated historic properties or human remains are encountered during construction. The Procedures Guiding the Discovery of Unanticipated Cultural Resources and Human Remains provide for the notification of interested parties, including Indian tribes, in the event of any discovery. The Connecticut, Massachusetts, New York, and Rhode Island SHPOs agreed with the procedure's provisions.

To ensure that our responsibilities under section 106 of the NHPA are met, we are recommending that Algonquin not begin construction until any additional required surveys are completed, remaining survey reports and treatment plans (if necessary) have been reviewed by the appropriate parties, and we provide written notifications to proceed.

### 5.1.11 Air Quality and Noise

Air quality impacts associated with construction of the Project would include emissions from fossil-fueled construction equipment and fugitive dust. Such air quality impacts would generally be temporary and localized, and are not expected to cause or contribute to a violation of applicable air quality standards. In addition, Algonquin proposes to employ proven construction-related practices to control fugitive dust such as application of water. Algonquin has prepared a Fugitive Dust Control Plan that describes the mitigation measures that would be implemented to control fugitive dust during Project construction, especially in sensitive areas such as road crossings, residences, and nonattainment areas. We have reviewed the Fugitive Dust Control Plan and find it acceptable.

Modifications to the five compressor stations, modifications to five existing M&R stations, and three new M&R stations would be sources of air emissions during operation of the Project. The modifications at the sixth compressor station would not result in impacts on air quality. Non-combustion related emissions would also occur from the pipeline and at the proposed M&R stations during normal operation. Based on the current design of the M&R stations in New York, Connecticut, and Massachusetts, state-level permits would not be required for these activities.

Due to modifications on existing equipment and/or removal of existing compressors, the potential emissions of most pollutants at the Stony Point and Southeast Compressor Stations would be reduced from their current potential levels. Further, based on the identified estimated emissions from operation of the proposed Project facilities and review of the modeling analysis for all compressor stations, the Project compressor station modifications would result in continued compliance with the NAAQS, which are protective of human health, including children, the elderly, and sensitive populations. Therefore, with the mitigation measures proposed by Algonquin, we do not anticipate that construction and operation of the proposed Project facilities would have a significant impact on air quality in the Project area or in the region itself.

We received several comments concerning the risk of radon exposure associated with in-home burning of natural gas originating from the Marcellus shale. While the FERC has no regulatory authority to set, monitor, or respond to indoor radon levels, many local, state, and federal entities (e.g., the EPA) establish and enforce radon exposure standards for indoor air. Studies have demonstrated that levels of radon in interstate pipelines carrying gas from the Marcellus shale would be below average indoor and outdoor radon levels.

We also received comments concerning the potential buildup of decay products within the pipeline and the risk of releasing these products to the environment either during pipeline maintenance or the removal of existing pipe. It should be noted that the half-lives of the radioactive decay products are relatively short and that, over time, these products would decay to non-radioactive lead. As a result, only a limited amount of radioactive decay material would be in the pipeline at any given time because any material that is within the pipeline for a prolonged period would become non-radioactive. Algonquin would clean the pipeline to be removed prior to it being reused for another purpose. Algonquin also conducts annual inspections and regular cleaning of its operational pipelines. Any liquids or solids removed during these cleanings would be collected and treated as hazardous material that would be disposed of at a licensed facility in accordance with federal, state, and local regulations. These measures would minimize the risk that any radioactive solids would be released to the environment.

Noise would be generated during construction of the pipeline and aboveground facilities. Noise impacts during construction would be highly localized and attenuate quickly as the distance from the noise source increases. The one exception to this would be certain HDD activities at the Hudson River and Interstate 84/Still River crossings. Ambient noise assessments performed at the HDD sites indicate

that mitigation would be necessary at all proposed HDD entrance locations to reduce the predicted noise generated by the HDD operations below the FERC noise requirement of 55 dBA  $L_{dn}$  at the closest NSAs. We reviewed Algonquin's noise assessment and agree that the mitigation measures committed to by Algonquin should result in noise levels in compliance with the FERC's noise criterion of 55 dBA  $L_{dn}$  at nearby NSAs. However, given the populated nature of the areas surrounding the two proposed HDD crossings, we are recommending that Algonquin file the noise measurements at the nearest NSA to the HDD entry sites obtained at the start of drilling operations, any noise mitigation measures implemented at the start of drilling operations, and any additional mitigation measures implemented at the Hudson River and Interstate 84/Still River HDD sites in its weekly construction status reports.

The modified compressor stations would generate noise on a continuous basis (i.e., 24 hours per day) once operating. Some noise would also be generated by the operation of modified M&R stations, the proposed new M&R Stations, and the proposed new MLRs. Algonquin completed an acoustical analysis to identify the estimated noise impacts at the nearest NSAs from these facilities. We reviewed the compressor station noise analyses and agree that, if properly implemented, these noise control measures would ensure that noise attributable to the modified compressor stations would be either less than 55 dBA  $L_{dn}$  at nearby NSAs, or where the noise currently attributable to the compressor station is greater than 55 dBA  $L_{dn}$ , the noise attributable to the station modifications would cause no perceptible change to existing station noise levels. Algonquin has stated that they are currently evaluating noise control measures to be implemented at the proposed modified and new M&R stations and MLR sites. To ensure that the actual noise levels produced at the aboveground facilities are not significant, we are recommending that Algonquin submit noise surveys and add noise mitigation until noise levels are below our acceptable thresholds.

In response to traffic concerns raised by municipalities due to the proposed construction along portions of the West Roxbury Lateral, Algonquin has committed to nighttime construction along Providence Highway and the High Street/East Street intersection along the West Roxbury Lateral to minimize traffic impacts on this roadway. While Providence Highway is a busy commercial street, there are some NSAs in proximity to this area that could be impacted by nighttime construction. However, we note that the Project construction would be similar to other road construction activities, which would also likely occur at night to avoid similar traffic impacts. The Providence Highway/High Street/East Street intersection is within a residential area. Construction noise would be clearly noticeable for residences in these locations during nighttime construction. However, Algonquin has estimated that construction in residential areas would progress about 40 to 200 feet per day, which means construction should last several days or a couple of weeks within any given neighborhood. Therefore, nighttime construction in these residential areas would result in a temporary impact on noise levels to the nearby NSAs.

Based on the analyses conducted, mitigation measures proposed, and our additional recommendations, we conclude that the Project would not result in significant air or noise impacts on residents and the surrounding communities during construction and operation of the AIM Project.

#### **5.1.12 Reliability and Safety**

The pipeline and aboveground facilities associated with the AIM Project would be designed, constructed, operated, and maintained in accordance with or to exceed the PHMSA Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The PHMSA specifies material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion.



We received comments regarding the siting of the pipeline in close proximity to schools and residential areas; the consequences of an explosion of a larger, 42-inch diameter pipeline; and Algonquin's emergency response procedures. The majority of the Project would replace existing, aged pipeline with new pipeline in the same location and would not increase the risk to the nearby public. For the small portion of the AIM Project where looping or a new pipeline is proposed, we conclude that the Project would represent a slight increase in risk to the nearby public. Based on available data, natural gas transmission pipelines continue to be a safe, reliable means of energy transportation.

All applicable Algonquin personnel receive annual training on the Emergency Response Plans, and the area offices conduct emergency response exercises on an annual basis. In the event of an emergency, the Algonquin's Gas Control Center would send a command signal to the remote control valves to initiate the closure of the valves. The remote control valves are capable of closing quickly to allow for a section of pipeline to be isolated from the rest of the system. Algonquin representatives would meet with the emergency services departments of the municipalities and counties along the proposed pipeline facilities on an ongoing basis as part of their liaison programs. Algonquin would provide these departments with emergency contact information and verbal, written, and mapping descriptions of the pipeline systems. This liaison program would identify the appropriate fire, police, and public officials and the responsibilities of each organization that may respond to a gas pipeline emergency, and coordinate mutual assistance in responding to emergencies.

We received several scoping comments concerning the safety of the Project and its proximity to the IPEC, a nuclear facility on the east bank of the Hudson River in Westchester County, New York. Given the distance of the proposed Project from the IPEC generating facilities and the avoidance and mitigation measures that would be implemented by Algonquin, the proposed route should not pose any new safety hazards to the IPEC facility. Based on our consultation with NRC, Entergy is required to assess any new safety impacts on its IPEC facility and provide that analysis to the NRC. Algonquin coordinated with Entergy to provide information about the proposed pipeline and Entergy performed a Safety Evaluation. The Safety Evaluation incorporates additional design and installation enhancements along approximately 3,935 feet of the AIM Project pipeline where it would lie closest to the IPEC facility (i.e., 0.5 mile from IPEC's security barrier). Algonquin would extend the mitigation measures outlined in the Safety Evaluation to the entire area between MPs 4.6 and 5.3 along the Stony Point to Yorktown Take-up and Relay segment. The Safety Evaluation concluded that the AIM Project poses no increased risks to the IPEC facility. On August 21, 2014, Entergy filed its Safety Evaluation for the AIM Project with the NRC. The NRC has reviewed the site hazards analysis performed by Entergy and has performed an independent confirmatory analysis of the blast analysis as well. The NRC concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the IPEC facility.

We also received many comments regarding safety concerns for the Buchanan-Verplanck Elementary School, which is located adjacent to the Stony Point to Yorktown Take-up and Relay segment between MPs 4.9 and 5.0. The Project right-of-way and construction workspace would be about 450 feet from the school facility at its closest point, on property owned by Con Edison, which abuts the school property. The pipeline would lie in a low area separated from the school by a natural berm and a wooded area. Algonquin would utilize standard open-cut construction in this area, and would not employ blasting to remove rock that may be encountered during excavation near the school. The enhanced mitigation measures that Algonquin has committed to with Entergy for construction of approximately 3,935 feet of pipeline near the IPEC facility would include the pipeline right-of-way crossing near the school property, and would serve to further increase the margin of safety for the school. This segment is also within an HCA, which brings it into Algonquin's integrity management program.

In addition, we received several comments expressing safety concerns about potential interactions between Algonquin's proposed pipeline facilities and the WPP transmission line. Algonquin has committed to conducting an AC/DC interference study. To ensure that safety concerns about potential interactions are adequately addressed, we are recommending that Algonquin provide its AC/DC interference study associated with the West Point Transmission Project, documentation of all consultations with WPP, as well as any additional mitigation measures that may be required to address safety-related issues or conflicts identified in the study.

Comments were also received asking about, or requesting, advance notifications of planned venting of gas (blowdowns), which are occasionally necessary during pipeline operations. Algonquin provides advance notifications of any planned blowdown to local police and fire departments, along with the non-emergency 911 systems, and to residents in the immediate vicinity of the blowdown event. In Massachusetts, notification of a planned release is also provided to the MassDEP. Notifications for a planned release are typically made at least 1 week in advance. The same local entities are notified as soon as practicable after any unplanned blowdown. These notifications enable local authorities to answer any questions they may receive from nearby residents who may hear the blowdown. This practice is consistent with other pipeline companies operating in residential areas. Natural gas vented to the atmosphere from pipeline facility blowdowns does not pose a health risk.

We conclude that Algonquin's implementation of the above measures and those described in the Entergy Safety Evaluation, would ensure public safety and the integrity of the proposed facilities.

#### **5.1.13 Cumulative Impacts**

Three types of projects (past, present, and reasonably foreseeable projects) could potentially contribute to a cumulative impact when considered with the proposed AIM Project. These projects include transmission projects; residential, commercial, or industrial developments; transportation projects; water and drainage systems; maintenance dredging; and reconstruction of trails and parkways. Projects and activities included in our cumulative impact analysis are located within the same counties and major watersheds that would be affected by the AIM Project.

We received numerous comments during scoping for the Project about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus shale region. Activities associated with Marcellus shale development would occur well over 10 miles from the AIM Project construction area, outside of the sub-basin watersheds crossed by the AIM Project facilities, and outside of the AQCRs for the AIM Project compressor stations. As a result, the local resources that may be affected by Marcellus shale development would not be affected by the Project, and local resources affected by the Project would not be affected by development in the Marcellus shale region.

We also received numerous comments about cumulative impacts of the planned Atlantic Bridge Project. Preliminary details about the Atlantic Bridge Project have been provided by Algonquin but no application has been filed. If this project moves forward as currently planned, it would impact resources in many of the same areas as the AIM Project and the level of impacts would be similar to those of the AIM Project. The AIM Project would be constructed in 2015 and 2016, and the disturbed areas would be restored prior to any start of the Atlantic Bridge Project, which at its earliest would be constructed in 2017. This assumes that Algonquin files an application and that the project is approved by the appropriate federal and state agencies. The other planned Algonquin project is the Access Northeast Project. Spectra Energy's website indicates that the company hoped to secure expression of interest from potential customers by the end of 2014, but it does not provide any information about the size or location of the proposed facilities. Spectra Energy indicates that, if they receive adequate market support, they

would begin seeking regulatory approvals in 2015 with a goal of constructing and placing the facilities in service by the end of 2018. The Access Northeast Project would not occur at the same time as the AIM Project, and project details are not known at this time.

Comments were also received regarding the future plans of the West Roxbury Crushed Stone Quarry and the potential for closing of the quarry and reclamation of the site. It is our understanding that although preliminary information on the filling of the quarry was provided to the MassDEP in January 2014, no specific plan has been proposed or authorizations requested. The type of soil to be used in the reclamation appears to be under debate. Therefore, any future plans are speculative at this point. In addition, reclamation of the site would likely need to occur over decades. As a result, any overlap with construction of the AIM Project seems unlikely. Further, a filling and closing of the quarry would negate many of the same commentor's concerns regarding quarry blasting impacts on the operation of the AIM Project.

Impacts associated with the proposed Project in combination with the other projects in the AIM Project area would be relatively minor overall, and we included recommendations in the EIS to further reduce the environmental impacts associated with the AIM Project, as identified in section 5.2. Algonquin's proposal to locate the majority of its facilities within or adjacent to existing, previously disturbed rights-of-way (e.g., pipeline utility, road, etc.) would minimize the areas of previously undisturbed vegetation that would be affected, thereby reducing the additional cumulative effects on vegetation communities and wildlife habitats. Similarly, each of the other projects considered in our cumulative impacts analysis would have been designed to avoid or minimize impacts on sensitive environmental resources. Any adverse impacts on sensitive resources resulting from these projects would be avoided or effectively minimized or mitigated through project design, BMPs, and regulatory agency permitting. Therefore, we conclude that the cumulative impacts associated with the AIM Project would be effectively limited.

The Project area is already served by various natural gas transmission lines so the Project would not extend public service to areas currently unserved by natural gas transmission lines. In addition, economic activity is already taking place. The demand for energy and the proposed Project are a result of, rather than a precursor to, development in this region. Therefore, we do not expect the Project to result in adverse growth-inducing effects.

#### **5.1.14 Alternatives**

We evaluated the No Action Alternative, energy alternatives, system alternatives, facility design and siting alternatives, alternative compressor units, route alternatives and variations, and aboveground facility site alternatives.

The No Action Alternative would eliminate or delay the short and long-term environmental impacts identified in this EIS, but the objectives of the Project would not be met. Algonquin would be unable to supply an additional 342,000 Dth/d of natural gas to its existing mainline system; increase deliveries to the Project Shippers at existing delivery points in southern New England; or provide three new delivery points for the Project Shippers. We evaluated the use of alternative energy sources and the potential effects of energy conservation, but these measures similarly would not satisfy the objectives of the Project, provide an equivalent supply of energy, or meet the demands of the Project Shippers.

Our analysis of system alternatives included an evaluation of the existing Tennessee and Iroquois systems as well as the planned Connecticut Expansion and Northeast Energy Direct Projects. None of the existing, proposed, or planned natural gas pipelines reach the delivery points required by the Project Shippers in southern New England. To provide service to these delivery points, the existing and planned systems would need to be modified by constructing hundreds of miles of new pipeline, much of which would duplicate the existing Algonquin system. This would result in greater environmental impacts than the Project. For this reasons, none of the existing or planned pipelines provide an environmental advantage over the Project.

We evaluated Algonquin's proposed design for the Project to determine if any alternative designs would be feasible and environmentally preferable to the Project. We determined that alternative designs would result in operational inefficiencies associated with flow characteristics of natural gas within the system, and would shift, but not avoid, environmental impacts from one location to another. For these reasons, we concluded that alternative designs would not be practical or provide an environmental advantage over the Project.

We also considered the feasibility of electric-driven compressor units in lieu of gas-fired units at each of the existing compressor station sites. We concluded that use of electric-driven compressor units would result in additional environmental impacts during construction and operation due to the installation of non-jurisdictional facilities, such as electric transmission lines and substations. Although electric-driven units would result in lower operating emissions, Algonquin would be required to comply with its existing air permits for air emissions at each site. Therefore, electric-driven compressors would not be preferable to or provide a significant environmental advantage over the proposed Project.

Prior to the issuance of the draft EIS, we evaluated route alternatives for the Hudson River crossing of the Stony Point to Yorktown Take-up and Relay segment and for the West Roxbury Lateral; several minor route variations along different segments of the Project; and site alternatives for M&R stations at the new delivery points in Connecticut and Massachusetts. With the exception of the Catskill Aqueduct Variation on the Stony Point to Yorktown Take-up and Relay segment, we determined that none of the route or site alternatives would offer significant environmental advantages over the Project, and we eliminated them from further consideration.

Following the issuance of the draft EIS, Algonquin evaluated several route variations it incorporated into its proposed route and we received comments requesting that we evaluate other alternatives and variations to the proposed route. The final EIS includes a more detailed analysis of these nine route variations including Hudson River HDD Variation, Blue Mountain Reservation Variation, Catskill Aqueduct Variation, Neponset River State Park and Stony Brook State Reservation Alternative, Norfolk Golf Club Variation, MBTA Variation, Gonzalez Field Variation, Mother Brook Variation, and St. Theresa Parish and School Variation. With the exception of the Blue Mountain Reservation and Neponset River State Park and Stony Brook State Reservation alternatives, all alternatives were determined to be advantageous to the proposed route and were incorporated into the Project.

Following the issuance of the draft EIS, Algonquin also evaluated 23 minor pipeline shifts, workspace adjustments, and design modifications. The final EIS includes a more detailed review of these proposed changes. Nineteen of these proposed changes were determined to be advantageous and were incorporated into the Project. We also evaluated alternative construction methods for several waterbody and wetland crossings; however, none were found to be feasible or preferable to the proposed construction methods.

## 5.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission authorizes the AIM Project, we recommend that the following measures be included as specific conditions in the Commission's Order. We believe that these measures would further mitigate the environmental impact associated with construction and operation of the proposed Project.

1. Algonquin shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff data requests), and as identified in the EIS, unless modified by the Commission's Order. Algonquin must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
  - b. justify each modification relative to site-specific conditions;
  - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
  - d. receive approval in writing from the Director of OEP **before using that modification**.
2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
  - a. the modification of conditions of the Commission's Order; and
  - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to ensure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from construction and operation of the Project.
3. **Prior to any construction**, Algonquin shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EIs' authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities for the Project.
4. The authorized facility locations shall be as shown in the EIS, as supplemented by filed alignment sheets. **As soon as they are available and before the start of construction**, Algonquin shall file with the Secretary any revised detailed survey alignment maps/sheets for the Project at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Algonquin's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. Algonquin's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.
5. Algonquin shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage and ware yards, new access roads, and other areas for the Project that

would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area.**

This requirement does not apply to extra workspace allowed by Algonquin's E&SCP and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of the Certificate and before construction begins,** Algonquin shall file an Implementation Plan for the Project for review and written approval by the Director of OEP. Algonquin must file revisions to the plan as schedules change. The plan shall identify:

- a. how Algonquin will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by the Order;
- b. how Algonquin will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
- c. the number of EIs assigned per spread, and how Algonquin will ensure that sufficient personnel are available to implement the environmental mitigation;
- d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
- e. the location and dates of the environmental compliance training and instructions Algonquin will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel changes), with the opportunity for OEP staff to participate in the training session;
- f. the company personnel (if known) and specific portion of Algonquin's organization having responsibility for compliance;

- g. the procedures (including use of contract penalties) Algonquin will follow if noncompliance occurs; and
  - h. for each discrete facility, a Gantt chart (or similar project scheduling diagram), and dates for:
    - i. the completion of all required surveys and reports;
    - ii. the environmental compliance training of onsite personnel;
    - iii. the start of construction; and
    - iv. the start and completion of restoration.
7. Algonquin shall employ one or more EIs per construction spread. The EIs shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
  - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
  - c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
  - d. a full-time position, separate from all other activity inspectors;
  - e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
  - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Algonquin shall file updated status reports **on a weekly basis for the AIM Project until all construction and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on Algonquin's efforts to obtain the necessary federal authorizations;
  - b. the current construction status of each spread of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
  - c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
  - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
  - e. the effectiveness of all corrective actions implemented;

- f. a description of any landowner/resident complaints that may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
  - g. copies of any correspondence received by Algonquin from other federal, state, or local permitting agencies concerning instances of noncompliance, and Algonquin's response.
- 9. **Prior to receiving written authorization from the Director of OEP to commence construction of any Project facilities**, Algonquin shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
- 10. Algonquin must receive written authorization from the Director of OEP **before commencing service on each discrete facility of the Project**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.
- 11. **Within 30 days of placing the authorized facilities for the Project into service**, Algonquin shall file an affirmative statement, certified by a senior company official:
  - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
  - b. identifying which of the Certificate conditions Algonquin has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
- 12. **Prior to construction of the AIM Project**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a Field Sampling Plan for potential contaminated sites that could be encountered during construction. The Field Sampling Plan shall include the locations of all proposed sampling, the number of samples to be taken, how and where the samples will be analyzed, the schedule for when the sampling would occur, and the process for providing the results to the applicable agencies. (*Section 4.2.2.6*)
- 13. All subsurface materials recovered from the Hudson River HDD process shall be appropriately sampled for PCBs **prior to disposal of the material**. If contamination is found, it shall be handled as outlined in the Unanticipated Contamination Encounter Procedures. (*Section 4.2.2.6*)
- 14. **Within 30 days of placing the AIM Project facilities in service**, Algonquin shall file with the Secretary a report discussing whether any water supply well complaints concerning well yield or quality were received and how each was resolved. (*Section 4.3.1.7*)
- 15. **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment**, Algonquin shall file with the Secretary its final site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP. The Plan shall be filed as critical energy infrastructure information in accordance with NYCDEP requirements. (*Section 4.3.2.1*)
- 16. **In the event of an unsuccessful HDD at the Hudson or Still Rivers**, Algonquin shall file with the Secretary a plan for the crossing of the waterbody. This shall be a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction. Algonquin shall file this plan concurrent with the submission of its application to the USACE and other applicable agencies for a permit to construct using this alternative crossing plan. The



- Director of OEP must review and approve this plan in writing before construction of the alternative crossing. (*Section 4.3.2.3*)
17. **Prior to construction of the Interstate 84/Still River HDD**, Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, a revised site-specific plan for the crossing if additional measures are needed to address any existing bridge foundations associated with the alignment across Ridgebury Road. (*Section 4.3.2.3*)
  18. **Prior to construction in the vicinity of the two vernal pools in New York**, Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, revised site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools as required through the permit review process with the applicable agencies. (*Section 4.4.3.2*)
  19. **Prior to construction along the take-up and relay portions of the Project**, Algonquin shall file with the Secretary a revised E&SCP, for review and written approval of the Director of OEP, adding to the responsibilities of the EI to inspect all erosion control devices and sediment barriers on a daily basis along wetlands for the take-up and relay segments, even when active construction and/or equipment operation is not occurring at a specific wetland location. (*Section 4.4.4*)
  20. **Prior to construction of the Haverstraw to Stony Point Take-up and Relay segment**, Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, a site-specific plan for the Harriman State Park, including any avoidance or mitigation measures developed with the NYSOPRHP and PIPC. (*Section 4.6.1.5*)
  21. **Prior to construction in New York**, Algonquin shall file with the Secretary all permit requirements and avoidance or mitigation measures developed for the timber rattlesnakes in consultation with the NYSDEC, and documentation of its correspondence with the NYSDEC regarding the proposed measures. (*Section 4.7.5.1*)
  22. **Prior to construction of the AIM Project**, Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, a revised set of Residential Construction Plans that incorporate and address the comments Algonquin received from affected landowners. (*Section 4.8.3.1*)
  23. **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a revised site-specific construction plan for St. Patrick's Church. The plan shall include:
    - a. a detailed schedule for construction activities within the HDD pullback area located on church property (i.e., month(s), week(s), days of the week, and hours of the day);
    - b. in addition to avoiding construction activities during weekend services, avoidance of construction activities during the morning masses held at 9:00 a.m. each Monday, Tuesday, Wednesday, and Friday;
    - c. provisions for an alternate parking area and/or shuttle service for use by parishioners during the time the church's parking areas are disrupted by construction activities; and
    - d. restoration of the church's parking areas to their preconstruction condition immediately following completion of construction activities in the HDD pullback area. (*Section 4.8.5.1*)

24. **Prior to construction of the West Roxbury M&R Station**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a detailed site-specific landscaping plan for mitigation of visual impacts at the station. (*Section 4.8.7.2*)
25. **Prior to construction in New York**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a revised Traffic Management Plan for the New York Pipeline Segments that includes the site-specific details for the crossings of Zachary Taylor Street, Gate Hill Road (Highway 210), Bleakley Avenue, Route 9A, Montrose Station Road, Maple Avenue, and Cordwood Road. (*Section 4.9.5.1*)
26. **Prior to construction of the West Roxbury Lateral**, Algonquin shall develop and file with the Secretary a detailed construction schedule for each segment of the lateral that includes the proposed construction timeframes (month, week, days), working hours, and times and dates of any restricted work hours. The detailed construction schedule shall be shared with each affected municipality. During active in-street construction of the West Roxbury Lateral, the schedule shall be updated and provided to the municipalities on a biweekly basis and included in Algonquin's construction status reports required by condition 8. (*Section 4.9.5.2*)
27. Algonquin shall not begin implementation of any treatment plans/measures (including archaeological data recovery); construction of facilities; or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:
  - a. Algonquin files with the Secretary all remaining cultural resources survey and evaluation reports, any necessary treatment plans, and the New York, Connecticut, Rhode Island, and Massachusetts SHPO's comments on the reports and plans;
  - b. the ACHP is provided an opportunity to comment on the undertaking if historic properties would be adversely affected; and
  - c. the FERC staff reviews and the Director of OEP approves all cultural resources survey reports and plans, and notifies Algonquin in writing that treatment plans/mitigation measures may be implemented or construction may proceed.

**All material filed with the Secretary containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE." (*Section 4.10.5*)**
28. Algonquin shall file **in the weekly construction status reports** the following for the Hudson River and Interstate 84/Still River HDD sites:
  - a. the noise measurements from the nearest NSA for each drill entry site, obtained at the start of drilling operations;
  - b. the noise mitigation that Algonquin implemented at the start of drilling operations; and
  - c. any additional mitigation measures that Algonquin would implement if the initial noise measurements exceeded an  $L_{dn}$  of 55 dBA at the nearest NSA and/or increased noise is over ambient conditions greater than 10 decibels. (*Section 4.11.2.3*)

29. Algonquin shall file a noise survey with the Secretary **no later than 60 days** after placing the authorized units at the Stony Point and Chaplin Compressor Stations in service. If a full load condition noise survey of the entire station is not possible, Algonquin shall instead file an interim survey at the maximum possible horsepower load and file the full load surveys **within 6 months**. If the noise attributable to the operation of all of the equipment at the compressor station under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Algonquin shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Algonquin shall confirm compliance with the  $L_{dn}$  of 55 dBA requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.3*)
30. Algonquin shall file noise surveys with the Secretary **no later than 60 days** after placing the authorized units at the Southeast, Cromwell, and Burrillville Compressor Stations in service. If a full load condition noise survey of the entire station is not possible, Algonquin shall file an interim survey at the maximum possible horsepower load and file the full load surveys **within 6 months**. If the noise attributable to the operation of the modified compressor station at full or interim power load conditions exceeds existing noise levels at any nearby NSAs that are currently at or above an  $L_{dn}$  of 55 dBA, or exceeds 55 dBA  $L_{dn}$  at any nearby NSAs that are currently below 55 dBA  $L_{dn}$ , Algonquin shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Algonquin shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.3*)
31. Algonquin shall file noise surveys with the Secretary **no later than 60 days** after placing the Guilford, Willimantic, Oakland Heights, and West Roxbury M&R Stations and the proposed new Clapboard Ridge Road MLR in service. If the noise attributable to the operation of any M&R Station or MLR at full load exceeds an  $L_{dn}$  of 55 dBA at any nearby NSA, Algonquin shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Algonquin shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.3*)
32. **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment**, Algonquin shall file with the Secretary its final AC/DC interference study associated with the West Point Transmission Project, documentation of all consultations with WPP, and any additional mitigation measures to address safety-related issues. (*Section 4.12.3*)

**APPENDIX T**  
**LIST OF PREPARERS**



**APPENDIX T  
LIST OF PREPARERS**

**Federal Energy Regulatory Commission**

**Suter, Magdalene – Environmental Project Manager, Executive Summary, Proposed Action, Alternatives, Land Use, Socioeconomics, Air Quality and Noise, Reliability and Safety, Cumulative Impacts**

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**APPENDIX T**  
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B.S., Natural Resources, 1982, University of Rhode Island

Submission Description: (doc-less) Out-of-Time Motion to Intervene of Jessica Porter under CP14-96-000.

Submission Date: 1/22/2015 9:54:32 PM

Filed Date: 1/23/2015 8:30:00 AM

Dockets

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CP14-96-000                      Algonquin Gas Transmission, LLC's Abbreviated Application for a Certificate of Public Convenience and Necessity and for Related Authorizations re its proposed Algonquin Incremental Market (AIM) Project under CP14-96.

Filing Party/Contacts:

Filing Party	Signer (Representative)
Other Contact (Principal)	
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Individual	jessicaleeporter@gmail.com

Basis for Intervening:

I am a direct abutter of the proposed Algonquin/Spectra pipeline and the West Roxbury Lateral. The pipeline is proposed to run directly behind my house, located at 4 Willow Street, Dedham, MA 02026.

Interest of Petitioner:

I seek to intervene in order to ensure public safety of my self, family, property and neighborhood and protect my property value Should this project proceed, I have the following concerns:

- Plans to build a high-pressure pipeline and Metering & Regulating (M&R) Station in a densely populated area of Dedham and West Roxbury that is near an active blasting quarry is potentially dangerous
- Lack of consideration of viable alternative routes by Spectra and National Grid in spite of explicit requests from the elected officials, abutters and residents in the neighborhood, as well as other neighborhoods to find another route in a nonresidential area and not bordering an active quarry.
- The impact on my property, my family, and the community in terms of overall safety and health that goes along with a high-pressure line
- The operation of a high-pressure pipeline and M&R Station in proximity to a vulnerable community which then increases the risk of exposure to hazardous air pollutants.
- Quality of life issues during a prolonged construction period
- Pattern of misleading and dishonest communications from Algonquin/Spectra

I have a direct and substantial interest in the outcome of this application process.

Motion to Intervene

Consequently, for all the reasons set forth above, I respectfully request that this Motion to Intervene be granted and that I be permitted to



participate, with the full rights of a party, in the above-captioned proceedings before FERC and any and all further proceedings in regard to this project.

My contact information is:

Jessica Porter

4 Willow Street

Dedham, MA 02026

mobile: 617-359-4764

jessicaleeporter@gmail.com

Document Content(s)

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**United States Senate**

WASHINGTON, DC 20510

**ASSOCIATED  
PUBLIC FILE**

CP14-96

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OFFICE OF  
EXTRADISPATCH

February 9, 2015

Chairwoman LaFleur  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Dear Chairwoman LaFleur,

As the Federal Energy Regulatory Commission (FERC) considers final approval of the Algonquin Incremental Market pipeline expansion (AIM) project, we urge you to ensure that the environmental, safety, and public health concerns of our constituents are thoroughly and substantially addressed before a final determination on this proposal is issued.

The AIM project is a significant expansion of the current natural gas transmission line on a route which travels through densely-populated communities in Rockland, Putnam and Westchester Counties in New York. The project would replace the current 26-inch pipeline with a new 42-inch diameter pipeline, nearly doubling its current size. Our offices have received comments from impacted communities and from local elected officials who have serious concerns about the safety and potentially negative environmental impacts of the proposed pipeline expansion.

We have serious questions about this pipeline, including:

1. What safety hazards it poses to the communities through which it will traverse, particularly given the pipeline's proximity to the Indian Point Energy Center, which houses two operating nuclear power plants,
2. What impact the pipeline will have on local park land,
3. What the potential health and environmental impacts are from exposure to airborne contaminants,
4. Whether the "pigging" process will have an impact on water and air quality, and if it has been adequately studied by an independent entity.

In light of the significant potential health, safety, and environmental concerns raised throughout the approval process, we ask that FERC not issue a final determination on this proposal until a thorough, independent review of all of the project's potential impacts is completed and made available to the public, with full opportunity for comment and review, including additional public meetings.

2015-00025

We hope that FERC will fully engage with the local elected officials, residents and community organizations in New York who have raised issues and concerns throughout the approval process.

Sincerely

A handwritten signature in black ink, appearing to read "Charles E. Schumer". The signature is fluid and cursive, with a long horizontal stroke at the end.

Charles E. Schumer  
United States Senator

A handwritten signature in black ink, appearing to read "Kirsten Gillibrand". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kirsten Gillibrand  
United States Senator

Document Content(s)

13769370.tif.....1-2

Bernard Vaughey  
215 Broadway  
Verplanck, NY 10596-0277  
February 8, 2015

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

RE: Algonquin Gas Transmission, LLC, Docket No. CP 14-96, AIM project  
Further indications of illegal segmentation and incomplete information

Dear Secretary Bose:

I request that FERC suspend the filing review and the processing of the certificate of need for the AIM project until questions and future intent are better documented and clarified.

If FERC is compelled to approve the AIM submittal now, I request that any approval be modified, and only work on the existing 30 inch line be considered, as this will provide approx. 70 percent of the AIM request. The remaining quantity should be addressed by reserve HP on both existing lines, as well as joint efforts with other transporters, and / or local storage, closer to the demand point, to deliver the remaining quantity.

Before FERC considers any approval on the 26 inch take-up and replace with a 42- inch line, FERC needs to **clarify the true intent** of this AIM project. Is this project for the **immediate needs** or is it for the objective of **future load growth demands**, which have not been documented in the docket? Why is FERC allowing the project to be segmented?

According to your own FERC records, representatives of Spectra met with FERC Staff on **January 7, 2015**, to discuss the Atlantic Bridge (AB) Project, and Spectra's use of the Pre-Filing Review Process. The FEIS for AIM was published on January 23, 2015. Why was the new AB project not discussed, noted or reviewed in the AIM FEIS? FERC was well aware of the AB project prior to the AIM FEIS release.

Of further concern with regard to open disclosure and transparency of information, on January 30, 2015, one week after the AIM FEIS was published, Algonquin submitted a pre-filing request for the Atlantic Bridge (AB) project to FERC, 10 months after the end of the open season, March 31, 2014. AIM pre-filed on June 18, 2013, for an open season that ended November 2, 2012 - 7 ½ months - and a supplemental open season that ended AFTER the pre-filing, on June 25, 2013.

Why was the AB project delayed additional months, until after the FEIS was issued for AIM?

To further support the Accufacts report indicating that the AIM project is overbuilt and segmented...AB proposes to extend pipeline addressed under the AIM project, but with no increase in compression Horsepower in Stony Point and Southeast for the added 222,000 Dth/d of capacity. In the AIM project, the Stony Point compressor requires an additional 14,000 new Horsepower to move an additional 237,500Dth/d of gas in the existing 30 inch line. Since NO additional HP is required for the AB project, this supports the contention that the AIM project is overbuilt and segmented. Why was this additional pipeline removal and replacement with a larger diameter pipe in the AB project not included in the DEIS or the FEIS as part of the AIM project? **The AIM project certificate process should be suspended** and the FEIS should be amended to address this additional AB pipe replacement and environmental impact, after appropriate public review and comment have been complied with.

As to the segmentation issue, segmentation occurs "when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action." The open season for AB ended March 31, 2014, well before the DEIS and FEIS. Why was the pre-filing delayed?

Attached are the maps for the two projects, as it relates to work in New York. How is this not a progression of an overbuilt gas line? The AB paperwork provides further justification of the information in the Accufacts report and the overbuilding done as part of the AIM project.

The FEIS indicates "...the AIM Project is designed to transport natural gas to serve the Project Shipper's load in the Northeast markets. No new LNG storage facilities are proposed, and the Project is not designed for the purpose of the export of natural gas. However, it is unknown whether the natural gas transported on the AIM Project facilities would be liquefied and stored in existing LNG storage facilities after the natural gas is delivered by Algonquin to the Project Shippers. "

The Atlantic Bridge Project is an independent project designed to meet the natural gas transportation needs of shippers to delivery points on Algonquin and Maritimes pipelines throughout New England beginning in November 2017.

There is a tremendous amount of conflicting and confusing information related to these projects. One report indicates that Atlantic Bridge would build on the Algonquin Incremental Market (AIM) project, which will add up to 342 MMcf/d of capacity to the existing Algonquin pipeline through New York, Connecticut, Rhode Island and Massachusetts by 2016. Atlantic Bridge would enable shippers to move gas from Millennium Pipeline system at Ramapo, NY or the Texas Eastern Transmission pipeline system at Lambertville, NJ to existing and new delivery points on AGT and MNP—**all the way to the Maritimes.**

While the AIM project may not be solely designed for the purpose of export, it appears that the system overbuild referenced by the Accufacts report is designed to be at least a part of the export process. And according to a DOE applications, that export to a LNG facility will be done solely on another Spectra Energy owned pipeline, the Maritimes and Northeast (M&N).

The FEIS for AIM was published on 1/23/15. The United States Department of Energy (DOE) gave notice of an application filed on **October 24, 2014** - DEPARTMENT OF ENERGY [FE Docket No. 14-179-LNG] Pieridae Energy (USA) Ltd.; Application for Long-Term Authorization **To Export Domestically Produced Natural Gas Through Canada to Non-Free Trade Agreement Countries** After Liquefaction to Liquefied Natural Gas for a 20-Year Period.

**Why is this not on the docket for the AIM project? Why was it not reviewed or mentioned in the FEIS, as the application is dated October 24, 2014?**

The Pieridae project is proposed to export up to 0.8 bcf/d, but indicates the plant could eventually use up to 1.33 Bcf/d of natural gas. If Pieridae and Spectra (M&N) are looking for that significant quantity of additional gas to be delivered, the companies involved **MUST** have a method, and plans, of how to get that added capacity there, and that it is feasible. Where is that information, to review the pipeline grid in the United States and Canada? Does that application circumvent any FERC involvement?

How much of this additional gas quantity will travel thru or adjacent to IPEC? The AIM documents indicate the current flow is approx. 1.4 Billion cubic feet per day (Bcf/d). The proposed AIM and AB project will increase this by 564,000 Dth/d or approx. 0.549 Bcf/d. **If this export project is solely Algonquin supplied, Spectra would, in the near future, almost double the amount of gas that travels each day thru / adjacent to IPEC.** What is the potential impact and heat flux of that added energy in the event of a rupture near the 3 nuclear reactors, spent rod pools, schools, church, playgrounds and homes?

The natural gas will be exported near Baileyville, Maine on the Maritimes & Northeast US Pipeline. It is anticipated that transportation services in Maine, Massachusetts and New Hampshire will be provided to Pieridae US primarily by the operators of the **M&N US Pipeline**, which system includes pipeline facilities on the US side of the proposed export point. The M&N US Pipeline is approximately 346 miles in length **and is owned by Spectra Energy Partners, LP** (77.53%), Emera, Inc. (12.92%) and ExxonMobil Corporation (9.55%).

Pieridae US will secure transportation on the existing **M&N CA Pipeline** to move natural gas from the point of export on the US-Canada border **to a point adjacent to the Goldboro LNG Project.**



The M&N CA Pipeline is approx. 543 miles in length and is owned by **Westcoast Energy Inc.** (77.53%), Emera, Inc. (12.92%) and ExxonMobil Corporation (9.55%) and operated by Westcoast Energy Inc. Both Spectra Energy Partners, LP and Westcoast Energy Inc. **are owned directly or indirectly by Spectra Energy Corp.**

The application also indicates that Pieridae US does not anticipate relying on any other onshore Canadian pipelines.

Further, on July 4, 2014, CBC News reported: "The company that owns the Maritimes and Northeast Pipeline has announced plans to expand its capacity to ship inexpensive U.S. shale gas **into** Maine and the **Maritimes.**" The same report noted that the capacity increase would be **up to 1 Bcf/d.** Where is that gas coming from? The AIM project?

Pieridae US requests **expedited review of this Application and approval of its request by no later than March 15, 2015** (the "Expedited Deadline"). Yet another "expedited review". We need all departments - FERC, DOE and others - to stop issuing "expedited" deadlines.

The DOE application contains statements such as:

- 1) "neither Pieridae nor any Pieridae affiliate has entered into an agreement or commitment of any kind with any third party in relation to any proposal to construct or expand or modify any pipeline system in the US."
- 2) "At the time of this Application, Pieridae US has not entered into any long-term gas supply, pipeline capacity or export contracts in conjunction with the natural gas export authorization requested herein. "
- 3)"Pieridae US has not entered into any transportation capacity arrangements at this time."

**However, there are a number of apparent contradictions about the existence of previous agreements or commitments.** The application also indicates that:

- 1) Pieridae has commitments..." it should be noted that the entire twenty year output of LNG produced from Train 1 of the Goldboro LNG Project **has already been committed for sale** by Pieridae CA to a particular German off taker under a long-term supply agreement and it is anticipated that, if Train 2 were constructed, all or a significant portion of its output would be committed for sale by Pieridae US to one or more European off takers. " Other documents indicate that Goldboro LNG has **already secured** a long term customer, German E.on, for 20 years, starting in 2019.

- 2) The application also indicates "Pieridae US's **long-term commitment to use a substantial amount of capacity on the M&N US Pipeline**, therefore, would support lower transportation units costs and greater reliability for other system users."

Any reasonable person would ask how one secures a long term customer for 20 years and makes a long term commitment to use a substantial amount of capacity without agreements or other documents? **FERC and the public need to see these documents and address the impact on the AIM project BEFORE any authorizations for AIM or AB can be granted.**

The FERC process is flawed and incomplete as it currently relates to the AIM project, as originally presented. FERC appears to repeatedly defer to the wishes of a privately held for-profit corporation over the needs, health, and safety of millions of Americans. The protests of scores of state and federal government officials along the proposed routes continue to be ignored by FERC. The FERC process disregards the mounting evidence of project overbuild and illegal segmentation, and the necessity to reopen the review process. The flawed, compartmentalized FERC review process is on track to allow significant increases in fracked shale natural gas to travel in the vicinity of 3 nuclear power plants ( IPEC ) without a clear, independent and transparent hazard analysis for current and future capacity of these pipelines.

Further, FERC's flawed process increases the potential for a global economic collapse. A gas line explosion that affects any of three Indian Point Nuclear Reactors (read the ACCUFACTS report) not only affects the health and welfare of millions of citizens; there are at least two federal gold and silver depositories nearby to IPEC. Has anyone taken this into account?

I request that the FEIS be withdrawn as published. I request that the certificate process be suspended. I request that all of the outstanding issues be addressed with an amendment to the FEIS. This amendment could be considered after the required public review and comment periods. The **amended FEIS** could then be published and only then, considered for approval.

I look forward to your review and response.

Thank you,

Bernard Vaughey



cc:

Chairwoman Cheryl A. LaFleur

US Congresswoman Nita Lowey

US Senator Charles Schumer

US Senator Kristen Gillibrand

NY Assemblywoman Sandy Galef

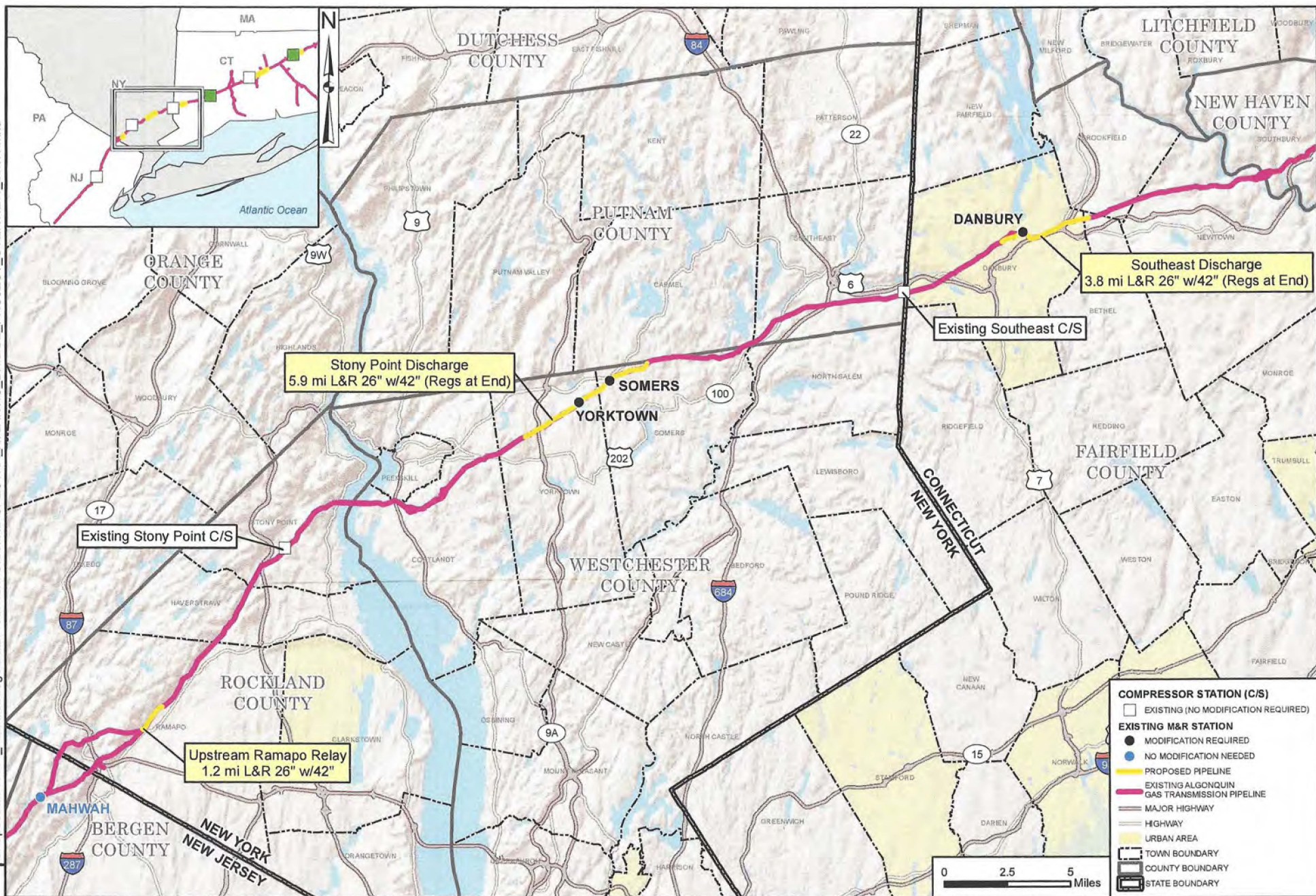
Supervisor Linda Puglisi

Daniel Riesel, Esq.

NYSDEC Michael T. Higgins, Project Manager





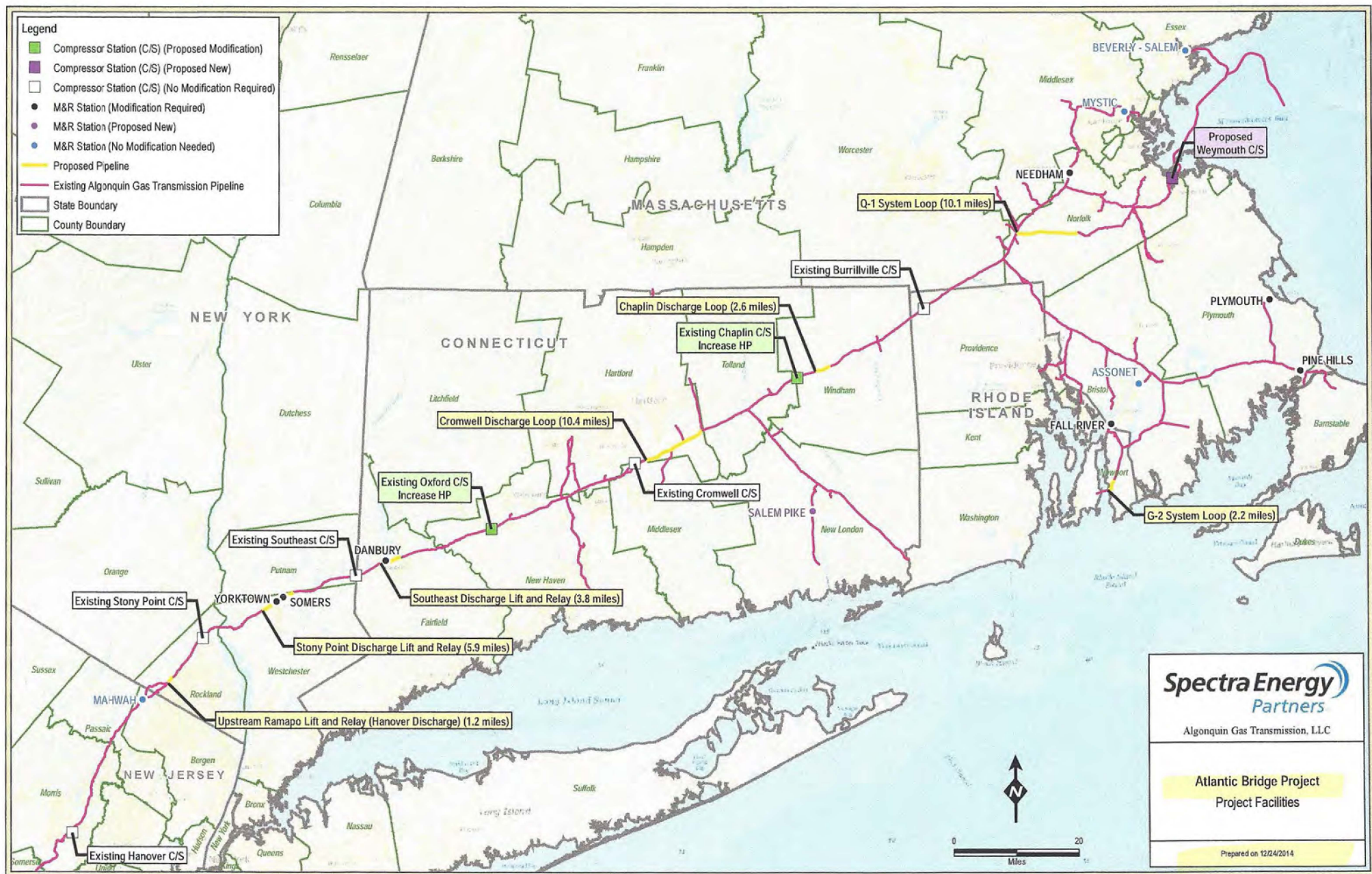


**Spectra Energy**  
Partners®

Algonquin Gas Transmission, LLC  
5400 Westheimer Court, Houston, TX 77056-5310 713/627-5400

J.A. - 1246





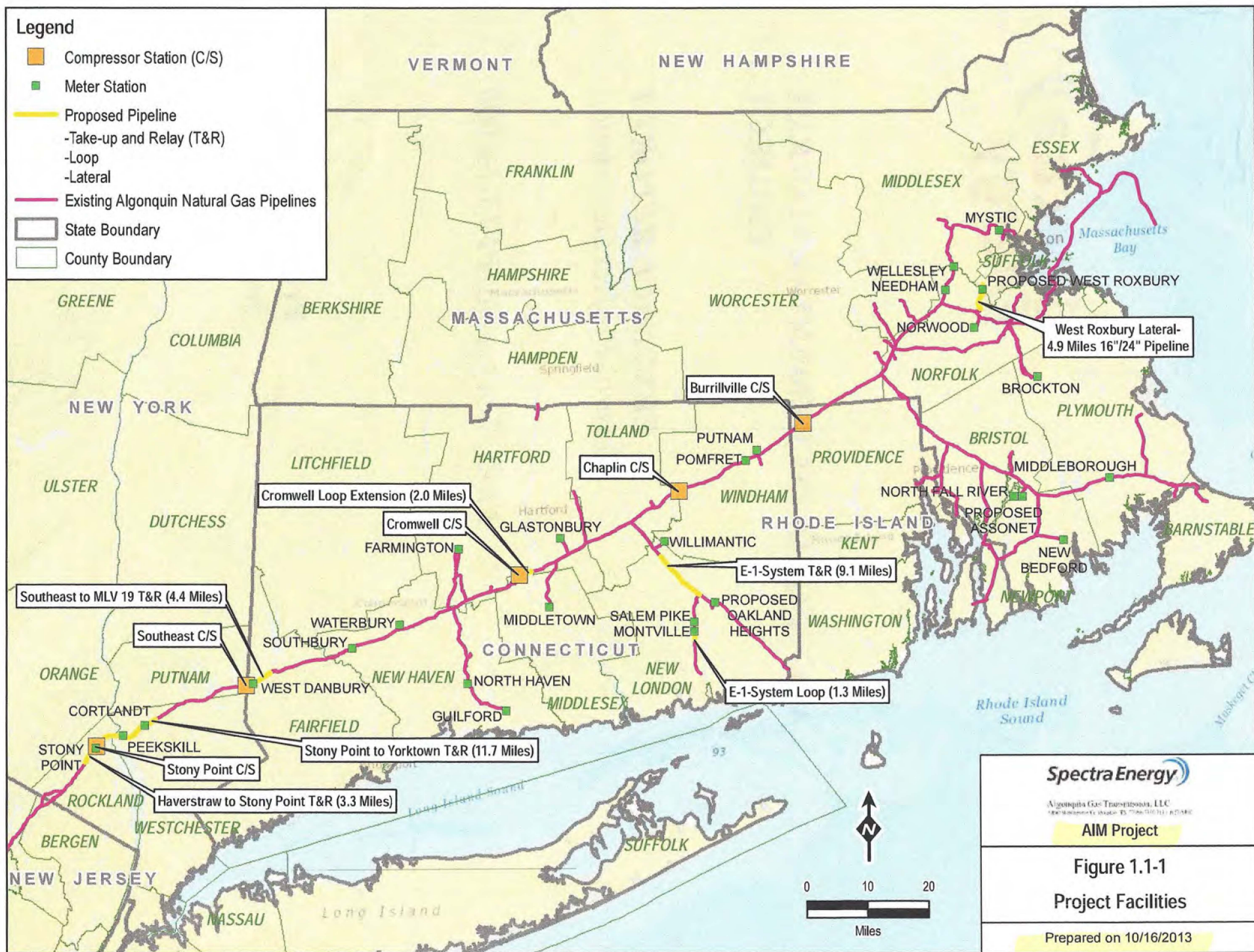






## Legend

- Compressor Station (C/S)
- Meter Station
- Proposed Pipeline
  - Take-up and Relay (T&R)
  - Loop
  - Lateral
- Existing Algonquin Natural Gas Pipelines
- State Boundary
- County Boundary



**Spectra Energy**

Algonquin Gas Transmission, LLC  
10000 Old County Road, Suite 200, Boston, MA 02128

AIM Project

**Figure 1.1-1**  
**Project Facilities**

Prepared on 10/16/2013



orderly mobilization of contractors and materials and the resolution of any outstanding landowner issues, and allow for construction to commence as soon as feasible in 2017. Timely commencement of these activities in early 2017 is critical to ensure the Project facilities are placed into service by November 1, 2017.

***2. Explain why the project sponsor needs/wants to participate in the pre-filing process.***

The Applicants are seeking authorization to use the Pre-Filing Review Process to provide the necessary environmental information to Commission Staff for review at the earliest practicable time in order to expedite the processing of the Applicants' certificate application.

Use of the Pre-Filing Review Process will benefit the Applicants, interested federal, state, and local agencies, and other stakeholders by:

- Assisting in the development of initial information about the Project and identifying affected parties;
- Facilitating issue identification and resolution;
- Providing a process that accommodates site visits, meetings with federal, state, and local agencies and stakeholders, participation in public information meetings (e.g., open houses), and the examination of alternatives;
- Providing interested federal, state, and local agencies and stakeholders with access to draft Environmental Resource Reports and other Project-related information;
- Minimizing the number of Commission Staff environmental data requests and subsequent filings;
- Maintaining a coordinated schedule for a thorough environmental impact review; and
- Facilitating preparation of Environmental Resource Reports and other related documents.

***3. Provide a detailed description of the project, including location maps and plot plans to scale showing all major plant components.***

The Project will consist of the following facilities:

- (i) Construction of approximately 23.9 miles of mainline pipeline, comprised of the following:
  - a. 1.2 miles of removal and replacement of 26-inch pipeline with 42-inch pipeline in Rockland County, New York, upstream of Algonquin's existing Ramapo Compressor Station;
  - b. 5.9 miles of removal and replacement of 26-inch pipeline with 42-inch pipeline in Westchester County, New York, downstream of Algonquin's existing Stony Point Compressor Station;
  - c. 3.8 miles of removal and replacement of 26-inch pipeline with 42-inch pipeline in Fairfield County, Connecticut, downstream of Algonquin's existing Southeast Compressor Station;

ATLANTIC BRIDGE



- d. 10.4 miles of 36-inch pipeline loop extension in Middlesex County, Connecticut, Hartford County, Connecticut, and Tolland County, Connecticut, downstream of Algonquin's existing Cromwell Compressor Station; and
  - e. 2.6 miles of 36-inch pipeline loop in Windham County, Connecticut, downstream of Algonquin's existing Chaplin Compressor Station.
- (ii) Construction of approximately 12.3 miles of lateral pipeline, comprised of:
- a. 2.2 miles of 12-inch pipeline loop on Algonquin's existing G-2 System in Newport County, Rhode Island;
  - b. 10.1 miles of 30-inch pipeline loop on Algonquin's existing Q-1 System in Norfolk County, Massachusetts.
- (iii) Construction at two existing Algonquin Compressor Stations for an additional 18,615 horsepower ("hp"), comprised of the following:
- a. Install one (1) Solar Taurus 70 (10,915 hp) gas-fired compressor unit at Algonquin's existing Oxford Compressor Station in New Haven County, Connecticut; and
  - b. Install one (1) Solar Taurus 60 (7,700 hp) gas-fired compressor unit at Algonquin's existing Chaplin Compressor Station in Windham County, Connecticut.
- (iv) Installation of one (1) Solar Taurus 70 (10,915 hp) gas-fired compressor unit at a new compressor station in Weymouth in Norfolk County, Massachusetts.
- (v) Construction at Algonquin meter stations, comprised of the following:
- a. Installation of over pressure protection ("OPP") at three existing meter stations; and
  - b. One (1) new meter station and additional modifications required for three (3) existing meter stations.

Please see Attachment 1 for USGS Quadrangle maps depicting the location of Project facilities. The attached maps identify the currently preferred route, which incorporates information gathered during document reviews, field work, and consultation.

In accordance with the Pre-Filing Review Process, the Applicants are committed to continuing review of the route alignment with stakeholders and working to accommodate their concerns. As the Applicants continue these ongoing efforts to refine the route alignment, updates to the maps will be submitted to Commission Staff.

ATLANTIC BRIDGE

150 FERC ¶ 61,163  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Chairman;  
Philip D. Moeller, Tony Clark,  
Norman C. Bay, and Colette D. Honorable.

Algonquin Gas Transmission, LLC

Docket No. CP14-96-000

ORDER ISSUING CERTIFICATE AND APPROVING ABANDONMENT

(Issued March 3, 2015)

1. On February 28, 2014, Algonquin Gas Transmission, LLC (Algonquin) filed an application in Docket No. CP14-96-000 pursuant to section 7(c) of the Natural Gas Act (NGA)<sup>1</sup> and Part 157 of the Commission's regulations<sup>2</sup> for authorization to construct and operate its Algonquin Incremental Market Project (AIM Project) in New York, Connecticut, Rhode Island, and Massachusetts. Algonquin also requests NGA section 7(b) authorization to abandon a meter and regulating station in New London County, Connecticut, which will be replaced as part of the project, as well as to remove and replace certain aboveground facilities. Algonquin states that the AIM Project will enable it to provide 342,000 dekatherms (Dth) per day of firm transportation service from its existing recipient points in Ramapo, New York, to various city gate delivery points in Connecticut, Rhode Island, and Massachusetts.

2. For the reasons stated below, we will grant the requested authorizations, subject to certain conditions.

**I. Background and Proposals**

3. Algonquin is a limited liability company organized and existing under Delaware law and an indirect, wholly-owned subsidiary of Spectra Energy Partners, LP. Algonquin is a natural gas company as defined in the NGA, engaged in the transportation of natural

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<sup>1</sup> 15 U.S.C. § 717f(c) (2012).

<sup>2</sup> 18 C.F.R. Pt. 157 (2014).

gas in interstate commerce subject to the Commission's jurisdiction. Algonquin's natural gas pipeline system extends from points near Lambertville and Hanover, New Jersey, through the states of New Jersey, New York, Connecticut, Rhode Island, and Massachusetts, to points near the Boston area.

**A. AIM Project Proposal**

4. Algonquin proposes to construct, install, operate, and maintain approximately 37.4 miles of pipeline and related facilities in New York, Connecticut, and Massachusetts. Specifically, Algonquin proposes the following activities:

- replace approximately 20.1 miles, in three segments, of 26-inch-diameter pipeline with 42-inch-diameter pipeline in Putnam, Rockland, and Westchester Counties, New York, and Fairfield County, Connecticut;
- install approximately 2.0 miles of 36-inch-diameter pipeline looping in Middlesex and Hartford Counties, Connecticut (Line 36A Loop Extension);
- replace approximately 9.1 miles of 6-inch-diameter pipeline with 16-inch-diameter pipeline on the E-1 System Lateral in New London County, Connecticut (E-1 System Lateral Take-up and Relay);
- install approximately 1.3 miles of 12-inch-diameter pipeline looping in New London County, Connecticut (E-1 System Lateral Loop); and
- install approximately 4.1 miles of 16-inch-diameter pipeline and approximately 0.8 miles of 24-inch-diameter pipeline off its existing I-4 System Lateral in Norfolk and Suffolk Counties, Massachusetts (West Roxbury Lateral).

5. In addition, Algonquin proposes to add 81,620 horsepower (hp) of compression at six compressor stations in New York, Connecticut, and Rhode Island with the following modifications:

- install two new 15,900 hp natural gas-fired compressor units, restage one existing compressor unit, install gas cooling for the new compressor units, and modify station piping at the Stony Point Compressor Station in Rockland County, New York;
- install one new 10,320 hp natural gas-fired compressor unit, restage one existing compressor unit, replace the compressor body of one existing compressor unit, install gas cooling for the new compressor unit, and modify station piping at the Southeast Compressor Station in Putnam County, New York;

- restage one existing compressor unit at the Oxford Compressor Station in New Haven County, Connecticut;
- install one new 15,900 hp natural gas-fired compressor unit, install gas cooling for the new compressor unit and two existing turbine-driven compressor units, and modify station piping at the Cromwell Compressor Station in Middlesex County, Connecticut;
- install one new 7,700 hp natural gas-fired compressor unit, restage two existing compressor units, install gas cooling for the new compressor unit and two existing compressor units, and modify station piping at the Chaplin Compressor Station in Windham County, Connecticut; and
- install one new 15,900 hp natural gas-fired compressor unit, restage one existing compressor unit, install gas cooling for the new compressor unit, and modify station piping at the Burrillville Compressor Station in Providence County, Rhode Island.<sup>3</sup>

6. Algonquin also proposes to abandon certain facilities, construct three new metering and regulating stations (meter stations), and modify 24 existing meter stations as follows:

- remove the Greenville Meter Station in New London County, Connecticut;
- construct a new meter station to replace the Greenville Meter Station and provide an interconnection with Norwich Public Utilities in New London County, Connecticut (Oakland Heights Meter Station);

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<sup>3</sup> Upon completion of the AIM Project, the Stony Point, Southeast, Cromwell, Chaplin, and Burrillville Compressor Stations will each have more than 15,000 horsepower. Algonquin states that it has considered installing and operating waste heat cogeneration facilities as discussed in the Interstate Natural Gas Association of America White Paper titled “*Waste Energy Recovery Opportunities for Interstate Natural Gas Pipelines*” (February 2008), but has determined that waste heat recovery currently is not viable for these compressor stations. We encourage Algonquin to monitor the Stony Point, Southeast, Cromwell, Chaplin, and Burrillville Compressor Stations, and provide information on its electronic bulletin board if it determines in the future that installing and operating waste heat recovery facilities would be technically feasible and commercially viable.

- construct a new meter station to provide an interconnection with NSTAR Gas Company in Bristol County, Massachusetts (Assonet Meter Station);
- construct a new meter station at milepost (MP) 4.2 of the proposed West Roxbury Lateral to deliver natural gas to Boston Gas Company in Suffolk County, Massachusetts (West Roxbury Meter Station);
- modify 24 existing meter stations in New York, Connecticut, and Massachusetts; and
- remove, replace, or install various pig launcher and receiver facilities, valves and related piping, and pressure regulating facilities in New York, Connecticut, and Massachusetts.

7. Algonquin held open seasons for the AIM Project from December 13, 2010, through February 11, 2011, and from September 20 through November 2, 2012. Algonquin held a supplemental open season and a reverse open season from June 11 through June 25, 2013, to solicit bids for additional service and for the release of existing firm transportation entitlements. As a result of the open seasons, Algonquin executed precedent agreements with eight local distribution companies and two municipal utilities (collectively, the Project Shippers)<sup>4</sup> for 342,000 Dth per day of firm transportation service, or 100 percent of the firm transportation service to be made available by the project. Algonquin estimates the cost of the AIM Project will be \$971,551,683.<sup>5</sup>

8. Algonquin states that it will provide services to the Project Shippers at negotiated rates. However, Algonquin proposes incremental recourse rates for the AIM Project capacity on its mainline facilities and West Roxbury Lateral. Algonquin states that while it is not requesting that the Commission find in this proceeding that there should be a presumption of rolled-in rate treatment for the cost of the AIM Project in a future section 4 rate proceeding, Algonquin reserves the right to seek rolled-in rate treatment.

9. Algonquin also proposes to recover incremental fuel use and lost and unaccounted for fuel on the AIM Project mainline facilities through incremental fuel

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<sup>4</sup> The Project Shippers are Bay State Gas Company; Boston Gas Company; Colonial Gas Company; Connecticut Natural Gas Corporation; Middleborough Gas and Electric; The Narragansett Electric Company; Norwich Public Utilities; NSTAR Gas Company; The Southern Connecticut Gas Company; and Yankee Gas Services Company.

<sup>5</sup> Algonquin estimates that the West Roxbury Lateral facilities will cost \$95,293,105 and the remaining AIM Project mainline facilities will cost \$876,258,578.

retention percentages and to track charges for the incremental services. Algonquin states that it will adjust its periodic tracker mechanisms to ensure that existing customers do not subsidize the costs of the new incremental services. Algonquin does not propose to assess a fuel reimbursement percentage for service on the West Roxbury Lateral.

**B. Algonquin Gas Transmission Project (AGT Project)**

10. In addition to the proposed AIM Project facilities, Algonquin's application identifies other replacement facilities that it states constitute a separate project that it plans to construct under the automatic authorization provided by section 2.55(b) of the Commission's regulations for qualifying replacement facilities.<sup>6</sup> Algonquin refers to this project as the Algonquin Gas Transmission Project (AGT Project).<sup>7</sup> Algonquin states that the AGT Project will include the removal of four obsolete 2,700 hp compressor units at the Stony Point Compressor Station that will be replaced by a new 15,900 hp compressor unit that is included in Algonquin's proposed AIM Project. However, Algonquin states that the AGT Project is a separate project for the purpose of meeting U. S. Environmental Protection Agency (EPA) emission standards and applicable state emission standards.

**II. Procedural Issues**

**A. Notice, Interventions, Comments, Protests, and Answers**

11. Notice of Algonquin's application was published in the *Federal Register* on March 24, 2014 (79 Fed. Reg. 15,987). Numerous timely and late motions to intervene were filed. Timely, unopposed motions to intervene are granted automatically pursuant to Rule 214 of the Commission's Rules of Practice and Procedure.<sup>8</sup> We will grant the

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<sup>6</sup> 18 C.F.R. § 2.55(b) (2014). Section 2.55(b) of the Commission's regulations provides authorization for pipeline companies to replace obsolete facilities with new facilities if those new facilities will have substantially equivalent design capacity and all construction activities will be confined to the existing right-of-way and using only the temporary work space used to construct the original facilities.

<sup>7</sup> See Algonquin's application at Resource Report 9, Appendix 9A.

<sup>8</sup> 18 C.F.R. § 385.214(c) (2014). Several of the timely intervenors filed their motions to intervene on the basis of the draft environmental impact statement (draft EIS) within the comment period for the draft EIS. Although these motions to intervene were filed after the deadline established by the Commission's notice of Algonquin's application, motions to intervene based on environmental grounds are deemed timely pursuant to sections 157.10(a)(2) and 380.10(a)(1)(i) of the Commission's regulations if

(continued...)

late motions to intervene, as doing so at this stage of the proceeding will not cause undue delay or prejudice other parties.<sup>9</sup> All parties are listed in Appendix A.

12. We received numerous comments and protests filed by individuals and entities. Hundreds of comments support the proposed project on the basis that, among other things, the project will bring jobs to the area. In comparison, hundreds of other comments and protests raise concerns over the AIM Project's potential environmental impact and the potential economic impact on property values. The environmental and property value concerns are addressed in the Final Environmental Impact Statement (final EIS) and in the environmental analysis below.

13. On March 26, April 23, June 10, July 18, and October 14, 2014, Algonquin filed answers to the comments and protests. Although the Commission's Rules of Practice and Procedure do not permit answers to protests,<sup>10</sup> we will accept Algonquin's answers because they clarify the concerns raised and provide information that has assisted in our decision-making process.

#### **B. Requests for Formal Hearing**

14. Mr. William Huston filed a request for a formal hearing to address issues regarding the cumulative impacts of Algonquin's proposed AIM Project and other natural gas pipeline projects planned for the Northeast, the indirect impacts of unconventional natural gas development, and general pipeline safety. Mr. Huston also requests assurance that the project will not export natural gas. As discussed in the environmental analysis below, the final EIS for Algonquin's proposed project considered the cumulative impacts of other projects, indirect impacts of natural gas development, as appropriate, and general pipeline safety. We also address below the concerns raised regarding the potential use of the proposed facilities to export natural gas.

15. Mr. Huston has raised no issues of material fact that cannot be resolved on the basis of the written record in this proceeding and all interested parties have had a full

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they are filed within the comment period on a draft EIS. 18 C.F.R. §§ 157.10(a)(2), 380.10(a)(1)(i) (2014).

<sup>9</sup> 18 C.F.R. § 385.214(d) (2014).

<sup>10</sup> 18 C.F.R. § 385.213(a)(2) (2014).

opportunity to present their views through multiple written submissions.<sup>11</sup> Therefore, we will deny the request for a trial-type evidentiary hearing.

### **III. Discussion**

16. Since the proposed facilities will be used to transport natural gas in interstate commerce and the facilities to be abandoned have been used to transport natural gas in interstate commerce subject to the jurisdiction of the Commission, the proposed abandonment, construction, and operation of the facilities are subject to subsections (b), (c), and (e) of section 7 of the NGA.

#### **A. Application of Certificate Policy Statement**

17. The Certificate Policy Statement provides guidance for evaluating proposals to certificate new construction.<sup>12</sup> The Certificate Policy Statement establishes criteria for determining whether there is a need for a proposed project and whether the proposed project will serve the public interest. The Certificate Policy Statement explains that in deciding whether to authorize the construction of major new facilities, the Commission balances the public benefits against the potential adverse consequences. The Commission's goal is to give appropriate consideration to the enhancement of competitive transportation alternatives, the possibility of overbuilding, subsidization by existing customers, the applicant's responsibility for unsubscribed capacity, the avoidance of unnecessary disruptions of the environment, and the unneeded exercise of eminent domain in evaluating new pipeline construction.

18. Under this policy, the threshold requirement for pipelines proposing new projects is that the pipeline must be prepared to financially support the project without relying on subsidization from its existing customers. The next step is to determine whether the applicant has made efforts to eliminate or minimize any adverse effects the project might have on the applicant's existing customers, existing pipelines in the market and their captive customers, or landowners and communities affected by the route of the new pipeline. If residual adverse effects on these interest groups are identified after efforts have been made to minimize them, the Commission will evaluate the project by balancing the evidence of public benefits to be achieved against the residual adverse

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<sup>11</sup> See, e.g., *Florida Gas Transmission Co., LLC*, 143 FERC ¶ 61,215, at P 27 & n.22 (2013).

<sup>12</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *order on clarification*, 90 FERC ¶ 61,128, *order on clarification*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement).



effects. This is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission proceed to complete the environmental analysis where other interests are considered.

19. Algonquin's proposal satisfies the threshold requirement that the pipeline must be prepared to financially support the project without relying on subsidization from its existing customers. The Commission has determined, in general, when a pipeline proposes an incremental rate for service utilizing proposed expansion capacity that is higher than the generally applicable system rate, the pipeline satisfies the threshold requirement that the project will not be subsidized by existing supplies.<sup>13</sup> Algonquin proposes an incremental recourse rate for the expansion capacity on its mainline facilities and a separate incremental recourse rate for service on the West Roxbury Lateral. Thus, the AIM Project can proceed without adverse rate effects on, or subsidies from, Algonquin's existing customers.<sup>14</sup>

20. The AIM Project will enable Algonquin to provide 342,000 Dth per day of firm service to the Project Shippers' delivery points to accommodate increasing demand in the New England region. Nothing in the record suggests that Algonquin's existing customers will experience any degradation in service, nor have any of Algonquin's shippers raised any objections to its proposal. Nor is there evidence that the AIM Project will adversely affect other pipelines or their customers.

21. We are additionally satisfied that Algonquin has taken appropriate steps to minimize adverse impacts on landowners. Algonquin will construct approximately 93 percent of the proposed 37.4 miles of replacement pipeline and pipeline looping utilizing existing right-of-way and previously disturbed property. In addition,

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<sup>13</sup> See, e.g., *Transcontinental Gas Pipe Line Corp.*, 98 FERC ¶ 61,155, at 61,552 (2002).

<sup>14</sup> Algonquin will be charging AIM Project Shippers negotiated rates rather than the proposed recourse rates. Under the Commission's general policies, if a pipeline experiences revenue shortfalls as the result of agreeing to negotiated rates with some shippers that are lower than the recourse rate or other generally applicable rate, the pipeline will not be allowed in a future NGA section 4 rate case to recover those revenue shortfalls from existing shippers, including its shippers paying the incremental recourse rate for expansion capacity or for service on the new lateral. See *Alternatives to Traditional Cost-of-Service Ratemaking for Natural Gas Pipelines and Regulation of Negotiated Transportation Services of Natural Gas Pipelines*, 74 FERC ¶ 61,076, at 61,242 (1996); *NorAm Gas Transmission Company*, 77 FERC ¶ 61,011, at 61,033-34 (1996), *order on reh'g*, 81 FERC ¶ 61,204 (1997).

modifications at 21 of the 24 existing meter stations will take place within the existing fenced facilities. Algonquin has made an effort to inform and consult with affected landowners, relevant resource agencies, and other interested stakeholders in the AIM Project. Accordingly, for purposes of our consideration under the Certificate Policy Statement, we find that Algonquin has taken steps to minimize any adverse impacts on landowners and surrounding communities.

22. Several parties and commenters question the need for the project. They contend that the proposed capacity exceeds the volume of natural gas committed for purchase by local gas distributors. One party states that natural gas prices in New England have declined, indicating reduced demand for natural gas. Several parties argue that increased gas production and declining domestic demand as the result of conservation efforts and increased reliance on renewable energy sources will result in the export of natural gas using excess project capacity. In support of their position, several commenters assert that the need for Algonquin's proposed expansion of pipeline capacity is overstated in light of a study commissioned by the New England States Committee on Electricity that showed if current levels of state energy efficiency programs continue, there is no need for additional natural gas infrastructure even with economic growth taken into account. Along with energy efficiency programs, commenters state that any increase in demand can and should be met by relying on renewable energy sources. Another commenter states that if the additional capacity will serve peak demand, that demand should be met by liquefied natural gas (LNG) storage facilities.

23. Algonquin has precedent agreements with the Project Shippers, including eight local distribution companies and two municipal utilities, for 15-year firm transportation service agreements subscribing the entire 342,000 Dth per day of service that will be created by the AIM Project. These service commitments constitute strong evidence that there is market demand for the project,<sup>15</sup> and Ordering Paragraph E of this order conditions construction clearance on Algonquin executing final contracts for service at the levels provided for in its precedent agreements.

24. Further, all of the Project Shippers are local distributors of gas to residential and commercial end users in their service areas and will use the expansion capacity on Algonquin's pipeline system to receive system supplies. Moreover, the Commission does not have jurisdiction over the exportation and importation of natural gas. Such

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<sup>15</sup> Certificate Policy Statement, 88 FERC at 61,748.

jurisdiction resides with the U. S. Department of Energy (DOE), which must act on any applications for natural gas export and import authority.<sup>16</sup>

25. As for project alternatives, our environmental review considered the potential for energy conservation and renewable energy sources to serve as alternatives to Algonquin's AIM Project, and concluded as discussed below that they do not presently serve as practical alternatives to the project.<sup>17</sup> Further, although state energy efficiency programs and conservation efforts have the potential to reduce the amount of additional pipeline capacity that will be needed in the future, the Project Shippers' commitment to long-term firm transportation agreements demonstrate the present need for Algonquin's AIM Project. Further, we cannot assume, as some commenters do, that the Project Shippers failed to consider the feasibility of additional gas storage, including LNG storage, before committing to additional pipeline capacity.

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<sup>16</sup> Section 3(a) of the NGA provides, in part, that "no person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so." 15 U.S.C. § 717b(a) (2012). In 1977, the Department of Energy Organization Act transferred the regulatory functions of section 3 of the NGA to the Secretary of Energy. 42 U.S.C. § 7151(b) (2012). Subsequently, the Secretary of Energy delegated to the Commission authority to "[a]pprove or disapprove the construction and operation of particular facilities, the site at which such facilities shall be located, and with respect to natural gas that involves the construction of new domestic facilities, the place of entry for imports or exit for exports." DOE Delegation Order No. 00-004.00A (effective May 16, 2006). The proposed facilities are not located at a potential site of exit for natural gas exports. Moreover, the Secretary of Energy has not delegated to the Commission any authority to approve or disapprove the import or export of the commodity itself, or to consider whether the exportation or importation of natural gas is consistent with the public interest. Thus, the issue of whether the export of LNG will cause economic harm is beyond the Commission's purview. *See Corpus Christi Liquefaction, LLC and Cheniere Corpus Christi Pipeline, L.P.*, 149 FERC ¶ 61,283, at P 20 (2014). *See also National Steel Corp.*, 45 FERC ¶ 61,100, at 61,332-33 (1988) (observing that DOE, "pursuant to its exclusive jurisdiction, has approved the importation with respect to every aspect of it except the point of importation" and that the "Commission's authority in this matter is limited to consideration of the place of importation, which necessarily includes the technical and environmental aspects of any related facilities").

<sup>17</sup> *See* final EIS, section 3-2, issued January 23, 2015.

26. In view of the considerations above, we find that Algonquin has demonstrated a need for the AIM Project and that the project's benefits to the market will outweigh any adverse effects on Algonquin's existing shippers, other pipelines and their captive customers, and on landowners and surrounding communities. Consistent with the criteria discussed in the Certificate Policy Statement and subject to the environmental discussion below, we find that the public convenience and necessity requires approval of Algonquin's proposal, as conditioned in this order.

**B. AIM Project Abandonment**

27. Algonquin proposes to abandon by removal the Greenville Meter Station in New London County, Connecticut. The present Greenville Meter Station will no longer be needed as it will be replaced by a new Oakland Heights Meter Station at the proposed new interconnection with Norwich Public Utilities in New London County, Connecticut. Therefore, we find that abandonment is permitted by the public convenience or necessity, and thus approve the abandonment by removal of the Greenville Meter Station.

**C. Proposed Removal of Compressor Units as Part of the Contemporaneous AGT Project**

28. As noted above, Algonquin's certificate application for the AIM Project identifies other construction activities that will be part of the contemporaneous AGT Project that Algonquin plans to undertake under section 2.55(b) of the Commission's regulations, which provides automatic authorization for qualifying replacement projects. The AGT Project includes the removal of four 2,700 hp engines at the Stony Point Compressor Station that need to be replaced to meet EPA and applicable state emissions standards. Algonquin asserts that it can rely on section 2.55(b) to remove the existing units because their compression will be replaced by one of the two new 15,900 hp compressor units proposed as part of the AIM Project.

29. Because the 15,900 hp compressor unit we are authorizing as part of the AIM Project exceeds the combined horsepower of the four existing compressors ( $4 \times 2,700 \text{ hp} = 10,800 \text{ hp}$ ), Algonquin cannot rely on section 2.55(b) of the Commission's regulations for authorization to remove the existing units.<sup>18</sup> However, since greater horsepower is needed at the Stony Point Compressor Station for the AIM Project expansion and the existing compressor units at that station need to be replaced to meet emissions standards, this order granting section 7(c) certificate authorization for the

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<sup>18</sup> 18 C.F.R. § 2.55(b)(1)(ii) (2014) (requiring replacement facilities to have "*substantially equivalent design delivery capacity*").

replacement compressor unit will also grant section 7(b) authorization for Algonquin to remove the four existing compressor units.

**D. Rates**

**1. Incremental Rate for AIM Project Mainline Capacity**

30. As stated above, Algonquin and the Project Shippers have agreed to negotiated rates. However, Algonquin proposes an incremental recourse reservation charge of \$42.5748 per month per Dth under its existing Rate Schedule AFT-1 for firm mainline expansion capacity. Algonquin submitted an incremental cost of service and rate design study showing the derivation of the AIM Project recourse rate for the mainline service based on a total first year cost of service of \$174,726,962 and billing determinants of 342,000 Dth per day. The proposed cost of service is based on Algonquin's rate of return of 10.37 percent and a system depreciation rate of 1.81 percent as approved in Docket No. RP99-262-000.<sup>19</sup> Algonquin proposes to charge its generally-applicable system interruptible transportation rate for interruptible service using mainline capacity created by the AIM Project.<sup>20</sup>

31. We have reviewed the proposed cost of service and the proposed recourse rate for the AIM Project mainline capacity and find it reasonable, except as discussed below.

32. In Exhibit P, Schedule 3, lines 9 (Account 853, "Compressor Stations – M&O,") and 26 (Account 864, "Compressor Stations – M&O,"), Algonquin proposes to include variable costs of \$386,828 and \$216,839, respectively, in its calculation of the firm reservation charge for AIM Project service under Rate Schedule AFT-1. In an August 28, 2014 data request Commission staff noted that section 284.7(e) of the Commission's regulations states, "[a] reservation fee may not recover any variable costs . . .,"<sup>21</sup> and directed Algonquin to provide support for the fixed and variable cost classifications included in Exhibit P, Schedule 3, including citations to Commission policy supporting those classifications.

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<sup>19</sup> See *Algonquin Gas Transmission, LLC*, 87 FERC ¶ 61,008 (1999).

<sup>20</sup> See, e.g. *Texas Eastern Transmission, LP*, 139 FERC ¶ 61,138, at P 31 (2012); *Gulf South Pipeline Co., LP*, 130 FERC ¶ 61,015, at P 23 (2010); *Kern River Gas Transmission Co.*, 117 FERC ¶ 61,077, at PP 313-14, 326 (2006).

<sup>21</sup> 18 C.F.R. § 284.7(e) (2014).

33. In its September 11, 2014 response, Algonquin stated “given that incremental O&M costs for incremental projects are *de minimis*, Algonquin’s practice in designing incremental project rates has been to include all incremental O&M costs [including those O&M costs that are classified as variable costs] in the firm reservation rate cost of service.”<sup>22</sup> In addition, Algonquin noted that “[t]he Commission has approved Algonquin’s recourse rates for incremental projects which included 100% of the incremental O&M costs in the demand charge for all of its incremental projects, including those projects that added horsepower and compression costs.”<sup>23</sup>

34. We acknowledge that in prior proceedings the Commission has approved Algonquin’s recourse rates for incremental projects, which have included variable costs in the calculation of the firm reservation charge. Those prior approvals, however, are contrary to sections 284.7(e) and 284.10(c)(2)<sup>24</sup> of the Commission’s regulations. Section 284.7(e) does not allow the recovery of variable costs in the reservation charge, and there is no “de minimis” cost exception to the rule. Section 284.10(c)(2) states that variable costs should be used to determine the volumetric rate. Therefore, going forward the Commission will require Algonquin to calculate its firm reservation charge consistent with sections 284.7(e) and 284.10(c)(2) of the Commission’s regulations.

35. When Algonquin submits its tariff records 30 to 60 days before placing the project facilities into service, we direct Algonquin to submit a revised incremental recourse reservation charge under Rate Schedule AFT-1 for firm service that does not include variable costs<sup>25</sup> associated with the AIM Project, consistent with the Commission’s

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<sup>22</sup> Algonquin’s September 11, 2014 Data Response, Response No. 1.

<sup>23</sup> Algonquin cites the Commission’s orders approving the CDS Project in Docket No. CP88-185, 52 FERC ¶ 61,001 (1990); the Niagara Import Point Project in Docket No. CP88-187, 52 FERC ¶ 61,257 (1990); the ANR Project in Docket No. CP89-661, 51 FERC ¶ 61,359 (1990); the Integrated Transportation Project in Docket No. CP92-185, 62 FERC ¶ 61,019 (1993); the Brockton Loop Cromwell Compressor Station Project in Docket No. CP93-261, 67 FERC ¶ 61,354 (1994); and the Ramapo Expansion Project in Docket No. CP06-76, 117 FERC ¶ 61,319 (2006).

<sup>24</sup> 18 C.F.R. § 284.10(c)(2) (2014).

<sup>25</sup> Variable costs include any costs that vary based on throughput, including, but not limited to, non-labor or materials and supplies portions of compression O&M costs included in: FERC Account 853 (Compression station labor and expenses), Account 864 (Maintenance of Compressor station equipment), Account 858 (Transportation and compression of gas by others), Account 859 (Other Expenses) and Account 867 (Maintenance of other equipment). *See, e.g., Ozark Gas Transmission System,*

(continued...)

regulations. At that time, Algonquin may also propose a usage charge under Rate Schedule AFT-1 to recover any variable costs of providing service on the AIM Project pursuant to section 284.10(c)(2) of the Commission's regulations.

## **2. West Roxbury Lateral Rate**

36. As described above, Algonquin's AIM Project includes a new West Roxbury Lateral in Norfolk and Suffolk Counties, Massachusetts, that will be approximately 5 miles long and capable of transporting 100,000 Dth per day on a firm basis. Algonquin proposes incremental firm and interruptible recourse rates under its existing Rate Schedules AFT-CL and AIT-2 for service utilizing West Roxbury Lateral expansion capacity. However, Algonquin and Boston Gas Company (Boston Gas), the Project Shipper which has subscribed all the capacity of the West Roxbury Lateral, have agreed to a negotiated rate for AIM Project expansion capacity on the lateral.

37. Algonquin's proposed incremental firm reservation charge for AIM Project expansion capacity on the West Roxbury Lateral is \$18.1976 per month per Dth. Algonquin's proposed interruptible charge for AIM Project expansion capacity on the West Roxbury Lateral is \$0.5983 per Dth, which is based on a 100 percent load factor of the proposed firm recourse reservation charge.<sup>26</sup> Algonquin calculated total projected incremental costs of service of \$22,337,066 for the West Roxbury expansion capacity. Of that amount, Algonquin allocated \$500,000 to interruptible services using the expansion capacity, thereby reducing the projected cost of service used to calculate the firm incremental recourse rate to \$21,837,066. Algonquin used billing determinants of 100,000 Dth per day to calculate the firm incremental recourse rate. While Algonquin used the same rate of return of 10.37 percent that underlies its current system rates and the proposed mainline firm incremental rate to calculate the West Roxbury Lateral incremental firm rate, as discussed above, Algonquin proposes a depreciation rate of 6.67 percent, derived from Boston Gas's 15-year contract term for service on the West Roxbury Lateral.

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64 FERC ¶ 61,298, at n.5 (1993) ("The Commission has classified non-labor compression and processing O&M costs as variable for more than 40 years [citation omitted]."); *Alabama-Tennessee Natural Gas Co.*, 38 FERC ¶ 61,315, at 62,023 (1987) ("Account No. 858 costs should be classified on an as-billed basis.").

<sup>26</sup> See Exhibit P, Schedule 7 of Algonquin's application.

38. The Commission has reviewed the proposed cost of service and the proposed incremental recourse rates for the AIM Project expansion capacity on the West Roxbury Lateral and finds they are reasonable.

### **3. Fuel Retention**

39. Algonquin proposes initial Fuel Reimbursement Percentages for service using the AIM Project mainline expansion capacity of 2.02 percent for Incremental AIM Service and 1.42 percent for Incremental AIM Service – Beverly Receipts/Non-Hubline Deliveries. Algonquin states that the incremental retention rates for mainline service will be subject to and adjusted in accordance with its incremental Fuel Reimbursement Percentage mechanism. Algonquin states that it will track changes in fuel costs for the new mainline incremental service on an incremental basis through its Fuel Reimbursement Quantity mechanism set forth in section 32 of its General Terms & Conditions (GT&C). Algonquin states that it will adjust its periodic tracker mechanisms to ensure that existing customers do not subsidize the costs resulting from this new incremental service.

40. Algonquin does not propose to assess a fuel reimbursement percentage for service on the West Roxbury Lateral because there is no separate compression on the lateral.<sup>27</sup>

41. We will approve Algonquin's proposed Fuel Reimbursement Percentages.

### **4. Reporting Incremental Costs and Revenues**

42. Section 154.309 of the Commission's regulations<sup>28</sup> includes bookkeeping and accounting requirements applicable to all expansions for which incremental rates are approved to ensure that costs are properly allocated between pipelines' existing shippers and incremental expansion shippers. Therefore, Algonquin must keep separate books and accounting of costs and revenues attributable to the incremental services and capacity created by the AIM Project on Algonquin's mainline and West Roxbury Lateral as required by section 154.309. The books should be maintained with applicable cross-reference as required by section 154.309. This information must be in sufficient detail so that the data can be identified in Statements G, I, and J in any future NGA section 4 or 5 rate case and is provided consistent with Order No. 710.<sup>29</sup> These measures protect

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<sup>27</sup> Algonquin's September 11, 2014 Data Response, Response No. 2.

<sup>28</sup> 18 C.F.R. § 154.309 (2014).

<sup>29</sup> *Revisions to Forms, Statements, and Reporting Requirements for Natural Gas Pipelines*, Order No. 710, FERC Stats. & Regs. ¶ 31,267, at P 23 (2008).



existing customers from cost overruns and from subsidization that might result from under-collection of a project's incremental cost of service, as well as help the Commission and parties to the rate proceedings determine the costs of the project.

## **5. Pro Forma Tariff Records**

43. Algonquin proposes *pro forma* tariff records incorporating changes to rates, rate schedules, and GT&C for the implementation of the initial incremental firm transportation rates under Rate Schedule AFT-1 for AIM Project mainline capacity and an incremental fuel percentage for service on the AIM Project mainline capacity. The *pro forma* tariff records also list the initial recourse rates under Rate Schedule AFT-CL and AIT-2 for firm and interruptible service on the West Roxbury Lateral. The Commission finds the changes as provided for by the *pro forma* tariff records acceptable and directs Algonquin to file actual tariff records not less than 30 days, or more than 60 days, before the in-service date of the AIM Project.

## **E. Engineering Analysis**

44. The Town of Cortlandt, New York (Cortlandt), filed reports by Accufacts that analyze the 42-inch-diameter replacement pipeline between Stony Point and Southeast Compressor Stations, near Cortlandt. Accufacts reviewed non-public Critical Energy Infrastructure Information material provided by Algonquin in this proceeding, including the flow diagrams in Exhibit G to Algonquin's application. Accufacts contends that the proposed 42-inch-diameter pipeline segment is oversized, and challenges Algonquin's design gas velocities.

### **1. Overbuilding**

45. Accufacts claims that Algonquin's 42-inch-diameter pipeline replacement is oversized for the purpose of increasing mainline capacity by 342,000 Dth per day, and the 42-inch-diameter replacement pipeline and new regulating facilities will reduce the pressure in the 42-inch-diameter pipeline that will result in wasting some of the horsepower to be added at the Stony Point Compressor Station as part of the AIM Project. Accufacts states that Algonquin can provide the additional 342,000 Dth per day of mainline service by installing a pipeline with a smaller diameter. Accufacts speculates that Algonquin is improperly segmenting construction activities by proposing pipeline of larger diameter than necessary to achieve the AIM Project's purpose of creating an additional 342,000 Dth per day of firm service in anticipation of future expansion activities.

46. We find these claims to be unfounded. Flow diagrams and engineering information provided by Algonquin show that currently there is no spare capacity on a firm basis that can be used to transport additional gas supplies further downstream of the Stony Point and Southeast Compressor Stations. During a winter peak day, the Stony

Point Compressor Station is currently operating at nearly 100 percent of the available horsepower of compression and the compressors are discharging the gas volumes at nearly the Maximum Allowable Operating Pressure (MAOP). Similarly, the Southeast Compressor Station is operating at peak horsepower at 100 percent utilization rate under transient conditions.<sup>30</sup>

47. If Algonquin were required to use smaller diameter replacement pipeline, it would require additional compression beyond that proposed as part of the AIM Project. Algonquin conducted hydraulic studies to analyze the effects that a smaller diameter pipeline would have on gas velocities and compression needs. Modeling results showed that the Stony Point Compressor Station would need an additional 40,000 hp to ensure that it will be able to provide the 342,000 Dth per day of firm transportation service requested by the expansion shippers.

48. In view of the above considerations, the 42-inch-diameter replacement pipeline will not enable Algonquin to provide more than the requested 342,000 Dth per day of service on a firm basis unless it constructs additional pipeline looping or compressor facilities in the future, which is pure speculation at this point. Thus, we reject Accufacts' assertion that Algonquin's proposal to use the 42-inch-diameter replacement pipeline is evidence of improper segmentation of projects. As discussed below in our environmental analysis, improper segmentation occurs when multiple applications artificially divide interrelated projects into "smaller, less significant components in order to avoid the [National Environmental Policy Act's] requirement that an EIS be prepared for all major federal actions with significant environmental impacts."<sup>31</sup> Accufacts has not identified any other specific projects by Algonquin.

## **2. Design Gas Velocity**

49. Accufacts also alleges that Algonquin's use of 100 feet per second (ft/s) design gas velocity is "extremely" high. Accufacts does not reference any industry studies or standards set by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA) to support its assertion.

50. Algonquin's design gas velocity of 100 ft/s will not cause a potential safety issue. According to a study co-sponsored by the American Petroleum Institute and Minerals

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<sup>30</sup> The term "transient" refers to the type of modeling performed for Algonquin's system that shows how the system runs over a period of time.

<sup>31</sup> *Arlington Storage Company, LLC*, 147 FERC ¶ 61,120, at P 75 (2014) (citing *Taxpayers Watchdog, Inc. v. Stanley*, 819 F.2d 294, 298 (D.C. Cir. 1987)).

Management Service (API Study), which evaluated the effects of high gas velocities on metal loss from liquid droplet erosion, design gas velocities would need to exceed 300 ft/s to cause erosion.<sup>32</sup> Although the API Study does not provide specific guidelines, it does provide velocity limits based upon multiphase flow regimes in production pipelines in a clean service system.<sup>33</sup> The study also states that laboratory tests on erosion in noncorrosive two-phase flow showed no measurable wear for velocities up to 100 ft/s. The report also confirms that flow velocities up to 100 ft/s do not create erosive wear in clean service conditions. Algonquin will continue to transport dry, single phase flow<sup>34</sup> through its pipeline (i.e., the gas transported by Algonquin does not have free flowing liquids that could contribute to or cause pipeline erosion). As a result, the Commission can examine Algonquin's system as one operating under clean service conditions, free of fluids and particles. We can conclude that for a dry, single phase flow through pipelines a 100 ft/s gas velocity will not represent an erosional risk on Algonquin's existing or proposed pipeline facilities.

## **F. Environmental Analysis**

### **1. Pre-filing Review**

51. Commission staff began its initial environmental review of the AIM Project following staff's approval on June 28, 2013, for Algonquin to use the pre-filing process in Docket No. PF13-16-000. As part of the pre-filing review, staff issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned Algonquin Incremental Market Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings* (NOI) on September 13, 2013. This notice was published in the *Federal Register* on September 19, 2013,<sup>35</sup> and sent to more than 1,800 interested entities on the staff's environmental mailing list, including representatives of federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners; other interested parties; and

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<sup>32</sup> Svedeman, S.J. and Arnold, K.E., *Criteria for sizing Multiphase Flowlines for Erosive/Corrosive Service*, 74-80, at 75 (1994).

<sup>33</sup> The term "clean service" is described as a pipeline transporting noncorrosive gas or liquid flow that is free of solids, which results from liquid-droplet erosion.

<sup>34</sup> The term "single phase flow" refers to a single gas phase or liquid phase flowing in a pipeline system. A "multiphase flow" refers to a situation where both gas and liquids are flowing simultaneously in a pipeline.

<sup>35</sup> 78 Fed. Reg. 57,626 (2013).

local libraries and newspapers. The notice briefly described the project and the EIS process, provided a preliminary list of issues identified by Commission staff, invited written comments on the environmental issues that should be addressed in the draft EIS, listed the date and location of four public scoping meetings<sup>36</sup> to be held in the area of the project, and established October 14, 2013, as the deadline for comments.

52. A total of 31 speakers provided oral comments on the project at the scoping meetings. In addition, more than 570 letters were filed by federal, state, and local agencies; elected officials; environmental and public interest groups; potentially affected landowners; and other interested stakeholders providing comments regarding the project.<sup>37</sup>

## **2. Application Review**

53. On February 28, 2014, Algonquin filed its application for authorization to construct the AIM Project. To satisfy the requirements of the National Environmental Policy Act (NEPA), Commission staff prepared an EIS for the project. The EPA, U.S. Army Corps of Engineers (Corps), and PHMSA participated in the preparation of the EIS as cooperating agencies. Commission staff issued the draft EIS for the AIM Project on August 6, 2014, which addressed the issues raised during the scoping period.

54. Notice of the draft EIS was published in the *Federal Register* on August 12, 2014, establishing a 45-day public comment period ending on September 29, 2014.<sup>38</sup> The draft EIS was mailed to the environmental mailing list including additional interested entities that were added since issuance of the NOI. Commission staff held five public meetings between September 8 and September 16, 2014, to receive comments on the draft EIS.<sup>39</sup> Approximately 143 speakers provided oral comments at these meetings, and we received 352 individual comments from federal, state, and local agencies; companies and

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<sup>36</sup> Commission staff held the public scoping meetings between September 30 and October 3, 2013, in the Town of Cortlandt, New York; Danbury, Connecticut; Norwich, Connecticut; and the Town of Dedham, Massachusetts.

<sup>37</sup> Table 1.4-1 of the final EIS provides a detailed and comprehensive list of issues raised during scoping.

<sup>38</sup> 79 Fed. Reg. 47,100 (2014).

<sup>39</sup> Commission staff held draft EIS comment meetings in the Town of Dedham, Massachusetts; Norwich, Connecticut; Danbury, Connecticut; the Town of Cortlandt, New York; and the Town of Mapleville, Rhode Island.

organizations; and individuals in response to the draft EIS before the comment period closed on September 29, 2014. Commission staff continued to accept comments past the comment period. Those letters received through October 10, 2014, include an additional 132 comments from federal, state, and local agencies; companies and organizations; and individuals.

55. In addition to the specific environmental issues raised, a number of commenters and parties contend that, in accordance with the Council on Environmental Quality's (CEQ) NEPA regulations, the draft EIS must be revised and reissued because it was not adequate as to allow meaningful analysis. In particular, they argue that the draft EIS needed to be reissued or supplemented to take into account subsequently filed information provided by Algonquin at Commission staff's request.

56. We disagree. The Commission has a longstanding practice to issue environmental documents along with recommended mitigation measures that request specific documentation of agency consultation, construction plans, and detailed information to supplement baseline data as the Commission did here. Commission staff's *draft* EIS does not parallel the *final* EIS at issue in the case *Northern Plains Resource Council, Inc. v. Surface Transportation Board (Northern Plains)*,<sup>40</sup> as Riverkeeper contends. In that case, the Surface Transportation Board issued a final EIS that gathered baseline data as part of mitigation measures to be completed after the NEPA process. Here, Commission staff published a draft EIS that evaluated baseline data. The public had the opportunity to comment on the supplemental information and plans requested by Commission staff and filed by Algonquin after the draft EIS was issued, and Commission staff continued to review other comments filed after the publication of the draft EIS. Algonquin's filings did not present new environmentally-significant information or pose substantial changes to the proposed action, and therefore, Commission staff did not reissue a draft EIS or a supplemental EIS.<sup>41</sup>

57. Further, the final EIS for the AIM Project issued by Commission staff on January 23, 2015, and noticed in the *Federal Register*,<sup>42</sup> addresses comments received on

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<sup>40</sup> *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1084-85 (9th Cir. 2011).

<sup>41</sup> 40 C.F.R. § 1502.9(c)(1) (2014). Under section 1502.9(c)(1) of the CEQ's regulations, an agency is only required to prepare a supplemental EIS if (1) "the agency makes substantial changes in the proposed action that are relevant to environmental concerns" or (2) "there are significant new circumstances or information relevant to environmental concerns." *Id.*

<sup>42</sup> 80 Fed. Reg. 5,104 (2015).

the draft EIS through October 10, 2014.<sup>43</sup> The final EIS was mailed to the same parties as the draft EIS, as well as to additional parties that commented on the draft EIS.<sup>44</sup> The final EIS addresses geology; soils; water resources; wetlands; vegetation; wildlife and fisheries; special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; cumulative impacts; and alternatives.

58. The final EIS concludes that if the project is constructed and operated in accordance with applicable laws and regulations, the project will result in some adverse environmental impacts. Most of these impacts described in the final EIS, however, will be reduced to less-than-significant levels with the implementation of Algonquin's proposed mitigation and staff's recommendations (now adopted as conditions in Appendix B of this order). Major issues of concern addressed in the final EIS are summarized below and include: the Ramapo Fault; West Roxbury Crushed Stone Quarry; waterbodies, wetlands, and vernal pools; the Croton Watershed and Catskill Aqueduct; residences; special interest areas; West Point Transmission Project; traffic; property values and homeowners' insurance; air quality; safety in general and at Indian Point Energy Center (Indian Point); Algonquin's planned Atlantic Bridge Project and segmentation of projects; cumulative impacts; indirect effects; and the need for alternatives.

### **3. Major Environmental Issues Addressed in the EIS**

#### **a. Ramapo Fault**

59. Commenters expressed concerns regarding the Ramapo Fault in the project area and the potential for earthquake activity to affect project facilities. The U.S. Geological Survey (USGS) has extensively studied the Ramapo Fault system, and the level of seismicity in the region. The USGS's review of data for evidence of Quaternary (Holocene) fault activity (i.e., within the last 1.6 million years) encompassing the eastern United States indicates that there is no clear association between the fault and small earthquakes that occur in the region. Further, there is insufficient geologic evidence to

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<sup>43</sup> Volume II of the final EIS includes responses to comments on the draft EIS through October 10, 2014. Most comments received after October 10, 2014, did not raise any new substantive issues that were not already addressed in previously filed comments. However, those comments received after October 10, 2014, that do raise new issues not previously identified are addressed in this order.

<sup>44</sup> The distribution list is provided in Appendix A of the final EIS.

indicate the existence of a tectonic fault or a Holocene-age slip or deformation associated with the fault.

60. As stated in the final EIS, specific site conditions, including earthquakes, are considered in the pipeline design.<sup>45</sup> The recorded magnitude of earthquakes in the project area is low and the ground vibration will not pose a problem for a modern welded-steel pipeline. Based on the low seismic risk and occurrence assigned to the project area, we agree with the conclusions in the final EIS and find the risk of damage to pipeline facilities by earthquakes to be low.

**b. West Roxbury Crushed Stone Quarry**

61. The West Roxbury Crushed Stone Quarry is located adjacent to the West Roxbury Lateral and West Roxbury Meter Station, along Grove Street from MPs 4.2 to 4.4 in West Roxbury, Massachusetts. Commission staff received many comments regarding the potential effect that the blasting operations at the West Roxbury Crushed Stone Quarry will have on the pipeline or meter station. As stated in the final EIS, Algonquin consulted with the owners of the quarry regarding the anticipated schedule and logistics for constructing the West Roxbury Lateral and Meter Station, as well as the long-term operations of these facilities. No direct conflicts were identified that will inhibit the construction of the project or the continued day-to-day operation of the quarry.

62. Algonquin also retained the services of a local, third-party geotechnical consultant, GeoEnvironmental, Inc. (GZA), to analyze the potential effects from the blasting operations at the quarry on the pipeline and meter station facilities. The GZA report concludes that the proposed West Roxbury Lateral pipeline will be subject to vibrations well within pipeline design parameters. In addition, Algonquin proposes several mitigation measures from the report to protect the pipeline from blasting impacts, including measures to envelope the pipeline in an engineered backfill consisting of either compacted sand or flowable fill (a low density concrete sand mixture).<sup>46</sup> Therefore, the final EIS finds that blasting at the quarry will not damage the proposed pipeline. The final EIS's conclusion is corroborated by its finding that there is no evidence the two water pipelines and one natural gas distribution pipeline that operate along Grove Street between the quarry and the proposed project have been impacted by blasting at the quarry.

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<sup>45</sup> See final EIS at 4-7 to 4-8.

<sup>46</sup> See final EIS at 4-5 to 4-6.

63. The GZA report also concludes that vibrations from blasting at the quarry will not be disruptive or damaging to the meter station. Many commenters note that one to two homes that were previously located at the site of the meter station experienced damage from blasting-related vibration. The meter station buildings, however, will be engineered pre-fabricated, pre-cast concrete structures designed for industrial use. Also, the in-line tool receivers and launchers, and the heaters will be above-grade, steel construction, and are not considered especially sensitive to vibrations.

64. Further, in 2009, the quarry changed its blasting operations to reduce the potential for fly rock. GZA's report states that based on the location of the proposed meter station relative to the quarry, the probability of a projectile from a blast operation at the quarry landing on the meter station site is highly unlikely. The probability of such a rock inflicting a direct strike on a segment of the limited amount of exposed pipe is less than 10,000,000 to 1. Based on this analysis, the final EIS concludes<sup>47</sup> that fly rock does not pose a concern for interruption of service or the release of natural gas at the meter station.

65. Commission staff also received comments on the potential closing of the quarry and consequent reclamation of the site. The final EIS states that although preliminary information on the filling of the quarry was provided to the Massachusetts Department of Environmental Protection in January 2014, no specific plan has been proposed or authorizations requested for closing the quarry. The type of soil to be used in the reclamation appears to be under debate. Therefore, any future plans are speculative at this point. In addition, site reclamation will likely take decades. In any event, the closing and filling of the quarry will negate many of the same commenters' concerns regarding quarry blasting impacts on the AIM Project facilities.

66. Finally, commenters also expressed concerns regarding the impact that new Massachusetts legislation will have on the quarry and AIM Project facilities.<sup>48</sup> The new legislation states that any blasting activity associated with a mined product should not be conducted within 500 feet of a natural gas pipeline or meter station without written approval by the Massachusetts Department of Public Utilities. As indicated above, there is already an existing natural gas distribution pipeline closer to the quarry than the proposed AIM Project facilities. Thus, notwithstanding construction of the AIM project facilities, the quarry will be faced with determining how the new legislation might affect its operations. The final EIS concludes correctly that any conflict with quarry operations

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<sup>47</sup> See final EIS at 4-6.

<sup>48</sup> 2014 Mass. Acts ch. 149, § 7.



associated with this new legislation already exists and that the AIM Project will not create any new conflict that the quarry does not already have to address.<sup>49</sup>

**c. Waterbodies, Wetlands, and Vernal Pools**

67. Several commenters note the potential for the AIM Project to impact waterbodies, wetlands, and vernal pools. The pipeline will cross a total of 102 surface waterbodies, one of which is the Hudson River that is considered a major waterbody.<sup>50</sup> Algonquin has proposed the horizontal directional drill (HDD) crossing method for the Hudson and Still River crossings, and dry crossing methods that avoid in-stream construction impacts for the remaining 100 waterbodies. None of the aboveground facilities will impact waterbodies. The final EIS finds that use of the HDD crossing method to cross waterbodies and implementation of the mitigation measures outlined in Algonquin's Erosion and Sediment Control Plan (E&SCP) and other project-specific plans will avoid or adequately minimize impacts on surface water resources.

68. Algonquin performed geotechnical feasibility studies at the proposed Hudson and Still Rivers sites and developed site-specific plans for the HDD crossings. Algonquin also developed a Best Drilling Practices, Monitoring, and Clean-up of Horizontal Directional Drilling Inadvertent Returns Plan (BDP Plan) that describes the measures that it will take to minimize the potential for inadvertent returns and releases at these locations. The final EIS concludes that Algonquin's implementation of the HDD method at the Hudson and Still Rivers will avoid in-stream disturbance of these waterbodies and is an appropriate technique for installing the pipeline at the Hudson and Still Rivers.<sup>51</sup> The final EIS also finds that Algonquin's BDP Plan and additional measures proposed by Algonquin will minimize the possibility of an inadvertent release to the extent feasible, and in the event an inadvertent release occurs, minimize any resulting impacts.

69. As stated in the final EIS, Algonquin has not provided a contingency plan that incorporates another location or another construction methodology for each of these HDD crossings. Therefore, Environmental Condition 16 in this order requires that in the event of an unsuccessful HDD at the Hudson or Still Rivers, Algonquin shall file a site-specific alternate plan for the crossing of the waterbody.

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<sup>49</sup> See final EIS at 4-6.

<sup>50</sup> Major waterbodies are those that are greater than 100 feet wide.

<sup>51</sup> See final EIS at 4-46 to 4-51.

70. Several commenters on the draft EIS also expressed concern regarding the possibility of encountering and releasing existing contaminated material during the crossing of the Hudson River. As stated in the final EIS, Algonquin conducted a review of each of the proposed HDD entry and exit locations and found no documented soil contamination. Moreover, utilizing the HDD method avoids disturbance to river-bottom sediments because all subsurface materials removed along the drill path during the drilling process are removed from the bore hole and contained within temporary lined mud pits. Thus, contamination is not expected to be encountered during HDD activities. In any event, Environmental Condition 13 requires that all subsurface materials recovered from the Hudson River HDD process be appropriately sampled for polychlorinated biphenyls before disposing the material. If contaminated materials are found, they will be handled as outlined in Algonquin's Unanticipated Contamination Encounter Procedures.

71. Construction of the AIM Project will impact a total of 52.5 acres of wetlands, including 17.0 acres of forested wetlands and 35.5 acres of herbaceous and shrub-scrub wetlands. No wetlands will be impacted by construction of Algonquin's aboveground facilities. The majority of the project's wetland impacts will be for temporary workspaces (48.4 acres) and these areas will eventually return to preconstruction conditions following construction, although as indicated in the final EIS, this may take years. For the operation of the pipeline, about 2.4 acres of forested wetland will be permanently converted to non-forested conditions. Algonquin's Final Wetland Mitigation Plan includes commitments for compensatory mitigation for both temporary impacts and permanent conversion of forested wetlands to another cover type.

72. As stated in the final EIS, eleven vernal pools were identified within the AIM Project study corridor. Two of the vernal pools are located within the temporary construction area and about 1,948 square feet of that vernal pool habitat will be affected by AIM Project construction. The primary effects of construction-related activity on vernal pools located in the temporary workspace will be similar to those for emergent wetlands. Vernal pools, however, may also be affected by the conversion of adjacent forested habitat to early successional stage habitats. Impacts from pipeline maintenance activities will include the periodic removal of emergent and woody vegetation. To minimize impacts during construction, all vernal pools will be treated as wetlands and protected by adherence to the measures outlined in Algonquin's E&SCP.

73. Construction and operation-related impacts on waterbodies, wetlands, and vernal pools will be further mitigated by Algonquin's compliance with the conditions of the Corps' section 404 and the applicable state section 401 permits required under the Clean Water Act (including compensatory mitigation) and by implementing the wetland protection and restoration measures contained in Algonquin's E&SCP. Additionally, Environmental Conditions 16 through 19 apply to the HDD crossings, vernal pools, and wetlands. Based on the avoidance and minimization measures developed by Algonquin,

as well as the final EIS recommended conditions that are now Environmental Conditions of this order, the EIS concludes that impacts on waterbody and wetland resources will be effectively minimized or mitigated to the extent practicable.<sup>52</sup>

**d. The Croton Watershed and Catskill Aqueduct**

74. Several comments contend that the project will impact the watersheds that supply water to the New York City metropolitan area. Three primary watersheds supply water to the New York City metropolitan area: the Croton, the Catskill, and the Delaware Water Supply Systems. While the Catskill and Delaware Water Supply Systems are about 50 miles north and northwest of the AIM Project facilities, portions of the AIM Project facilities will be located within the Croton Water Supply System.

75. The Croton Watershed is protected under a long-term management plan by the New York City Department of Environmental Protection (NYCDEP). The 2008 New York State section 303(d) list of impaired waterbodies identifies phosphorus as a pollutant of concern for eight impaired reservoirs within the Croton Watershed. Typical pollutant sources include stormwater runoff from impervious surfaces, agricultural land and construction sites, excessive fertilizer use, leachate from septic systems, and effluent from wastewater treatment plants.

76. As stated in the final EIS, the Croton Watershed will be crossed by the Stony Point to Yorktown Take-up and Relay segment between MPs 10.0 and 12.3 in the Town of Cortlandt, New York, and by the Southeast to mainline valve-19 Take-up and Relay segment between MPs 0.0 and 0.1 in the Town of Southeast, New York. Algonquin will sequence construction activities to minimize the amount and duration of an open right-of-way within the watershed. Algonquin will use a separate construction crew to work in the approximately 2.3-mile-long stretch within the watershed and has also committed to an environmental inspection and compliance monitoring program to monitor and enforce compliance with all permit conditions to protect the environment during construction. In addition, Algonquin is working with the NYCDEP to develop a Stormwater Pollution Prevention Plan (SWPPP) that addresses NYCDEP's requirements for constructing within a New York City watershed.

77. Commenters also expressed concerns about the project's potential impact on the Catskill Aqueduct within the Croton Watershed. Algonquin's existing pipelines currently cross over the aqueduct. Algonquin will remove its existing 26-inch-diameter pipeline and casing, but will not disturb the existing protective concrete slab, pending concurrence from the NYCDEP. Algonquin will build the proposed 42-inch-diameter pipeline above

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<sup>52</sup> See final EIS at 4-58 to 4-59, 4-74.

the aqueduct at a 50-foot offset from the existing line. The final EIS concludes that Algonquin's proposed mitigation will adequately protect the Croton Watershed and Catskill Aqueduct.

78. In addition, NYCDEP will require a Land Use Permit with detailed descriptions of work and additional information regarding impacts on the aqueduct resulting from the construction and operation of the project facilities. Algonquin will prepare final engineering designs to support NYCDEP's load requirements for vehicles on their right-of-way, and will submit them for review and approval as part of the Land Use Permit application process. As recommended in the final EIS, and as included as Environmental Condition 15 in this order, we will require Algonquin to file its final site-specific crossing plan for the Catskill Aqueduct developed in consultation with the NYCDEP.

**e. Residential Construction**

79. Construction of the AIM Project will occur within 50 feet of 332 residential structures and 94 non-residential structures. The majority of the residences identified are located along the West Roxbury Lateral, including many within 10 feet. Several commenters expressed concern about the proximity of construction activities relative to their residences. The final EIS recognizes that all activities within 50 feet of residences along the West Roxbury Lateral will be associated with in-street construction; therefore, no residential land will be affected.

80. Even so, as described in the final EIS, Algonquin will implement general measures to minimize construction-related impacts on residential areas, including installing safety fence at the edge of the construction right-of-way; attempting to preserve mature trees and other vegetation; backfilling the trench as soon as the pipe is laid, or placing temporary steel plates or timber mats over the trench; and completing final cleanup within 10 days after the trench is backfilled. Algonquin also developed and distributed acceptable site-specific Residential Construction Plans to affected landowners with residences within 50 feet of the construction workspace to inform them on these proposed measures that will minimize disruption and maintain access to the residences.

81. The final EIS concludes that the Residential Construction Plans are acceptable; however, the final EIS's recommended Environmental Condition 22 is included in this order to require Algonquin to file revised plans that incorporate and address any comments Algonquin receives from affected landowners.<sup>53</sup>

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<sup>53</sup> See final EIS at 4-145.

**f. Special Interest Areas**

82. The final EIS discusses 32 special interest areas (i.e., public lands, recreation sites, or other designated areas) that may be affected by construction or operation of the project. In general, project impacts on special interest areas will be temporary and limited to the period of active construction, which typically only lasts several days to several weeks in any one area. These impacts will be further minimized by implementing the measures in Algonquin's E&SCP, traffic management plans, and Fugitive Dust Control Plan, as well as its proposed measures for noise mitigation.

83. Commenters identified several specific special interest areas that are of particular concern including: St. Patrick's Church in the Hamlet of Verplanck, New York; Buchanan-Verplanck Elementary School in Buchanan, New York; Blue Mountain Reservation in the Town of Cortlandt, New York; Sylvan Glen Park Preserve and Granite Knolls Park West in the Town of Yorktown, New York; and Gonzalez Field in the Town of Dedham, Massachusetts. These sites are discussed below.

84. Several commenters expressed concerns about impacts on St. Patrick's Church during construction of the Stony Point to Yorktown Take-up and Relay. The project will cross the church property at about MP 4.1, and a new easement will be required for this crossing. In addition, the temporary workspace associated with the pullback area of the Hudson River HDD will be located on church property. Algonquin has agreed to avoid construction activities during weekend services at the church; however, church weekday functions will experience temporary impacts from construction noise, dust, and traffic, similar to those impacts experienced by other landowners and businesses in the project area. As recommended in the final EIS, and to ensure that impacts on St. Patrick's Church are further minimized, Environmental Condition 23 in this order requires Algonquin to file a revised site-specific construction plan for St. Patrick's Church including a detailed schedule for construction activities within the HDD pullback area, measures to avoid construction activities during weekday morning masses and weekend services, provisions for alternate parking or shuttle service for use by parishioners when the church's parking areas are disrupted, and measures to restore the parking areas to their preconstruction condition immediately following completion of construction activities. The final EIS concludes that these measures are sufficient to minimize impacts on St. Patrick's Church to less than significant levels.<sup>54</sup>

85. We also received several comments expressing safety concerns regarding the Buchanan-Verplanck Elementary School, which is located adjacent to the Stony Point to Yorktown Take-up and Relay between MPs 4.9 and 5.0 in New York. The project right-

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<sup>54</sup> See final EIS at 4-158 to 4-159.

of-way and construction workspace will be about 450 feet from the school facility at the closest point. The final EIS states that the pipeline will lie in a low area separated from the school by a natural berm and a wooded area, which will provide a buffer to visual, noise, and dust impacts from construction activities. Algonquin will utilize standard open-cut construction in this area, and will not employ blasting near the school. The enhanced mitigation measures that Algonquin has committed to for construction near the Indian Point facility, as discussed below, will include the pipeline near the school property, further increasing the margin of safety for the school. Therefore, the final EIS concludes that impacts on the Buchanan-Verplanck Elementary School during both construction and operation will be sufficiently minimized.<sup>55</sup>

86. Several commenters also expressed concerns regarding impacts on the Blue Mountain Reservation in the Town of Cortlandt, New York. As stated in the final EIS, the Stony Point to Yorktown Take-up and Relay will cross the Blue Mountain Reservation between about MPs 6.7 and 8.1, and again between MPs 8.4 and 8.5. The new 42-inch-diameter pipeline will replace the existing 26-inch-diameter pipeline within an existing 6-foot-wide permanent easement. Although no new permanent right-of-way will be added within the reservation, about 18.8 acres of temporary workspace will be required for construction activities. Construction noise, dust, tree clearing, and traffic will temporarily impact recreational use of the Blue Mountain Reservation during project construction. Algonquin will implement the measures in its E&SCP to minimize impacts on the area, and surrounding woodland will largely screen visual impacts on the recreational and aesthetic use of the reservation during construction. After construction, all impacted areas within the reservation will be returned to their preexisting use, and no permanent impacts will occur. The final EIS concludes that although long-term impacts associated with tree clearing will occur, overall impacts on the Blue Mountain Reservation will be sufficiently minimized by installing the pipeline within Algonquin's existing permanent easement.<sup>56</sup>

87. We received multiple comments expressing concerns about impacts on Sylvan Glen Park Preserve and Granite Knolls Park West in the Town of Yorktown, New York. The Stony Point to Yorktown Take-up and Relay will cross parcels within these parks within existing right-of-way for a total distance of about 1.2 miles. Additionally, a new launcher/receiver and pressure regulating facility will be constructed and operated within the existing right-of-way at about MP 12.3, on a parcel within Granite Knolls West. Algonquin stated in its comments on the draft EIS that it removed from its proposed project application a contractor ware yard within the park. Although the project facilities

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<sup>55</sup> See final EIS at 4-159 to 4-160.

<sup>56</sup> See final EIS at 4-160 to 4-161.

will be installed within existing permanent easements, construction of the project will require the clearing of a strip of mostly upland forest between 30 to 40 feet wide on the north side of the existing right-of-way. Some additional tree clearing will also be required for additional temporary workspaces throughout the two parks. The final EIS states that construction activities, noise, and dust will temporarily impact recreational use at Sylvan Glen and Granite Knolls West.<sup>57</sup> Algonquin will, however, mitigate construction impacts by installing safety fencing, installing signage, and watering regularly to control fugitive dust. Algonquin will also place timber mats over two trails identified by the Town of Yorktown, to keep the trails open during project construction. After the construction period, Algonquin will return the construction area to its preexisting use. No other permanent impacts on the parks will occur, although the impacts associated with tree clearing will be long-term.

88. Commenters also expressed concerns regarding impacts to Gonzalez Field in the Town of Dedham, Massachusetts. Gonzalez Field is a public athletic field located at the intersection of High Street and East Street. The West Roxbury Lateral will traverse the edge of the field from about MP 2.4 to 2.5. As described in the final EIS, Algonquin incorporated a route variation to minimize impacts on Gonzalez Field, reducing the number of soccer fields disrupted from two to one, at the edge of the property nearest to Providence Highway. Also, additional temporary workspace will be located within the field's parking lot. As identified in the final EIS, construction of the project will temporarily disrupt recreational use as well as access to and parking at Gonzalez Field.<sup>58</sup> After construction, the field will be restored to its preexisting use and no permanent impacts will occur from operation of the pipeline. Algonquin also agreed to schedule construction across Gonzalez Field after the conclusion of the Town of Dedham's soccer program in the fall, thereby minimizing recreational impacts. The final EIS concludes that these measures will sufficiently minimize impacts on recreational use of Gonzalez Field.

**g. West Point Transmission Project**

89. Commenters expressed safety concerns about potential interactions between Algonquin's pipeline facilities and the proposed West Point Transmission Project. The West Point Transmission Project is a 1,000-megawatt underwater power cable proposed by West Point Partners (WPP) to bring untapped power from northern and western New York State to the New York City area. The cable will interconnect with existing transmission facilities at the Buchanan North Substation in the Village of Buchanan,

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<sup>57</sup> See final EIS at 4-162.

<sup>58</sup> See final EIS at 4-168.

New York. WPP also proposes to construct a converter station that will occupy about 3.8 acres on a 105-acre parcel owned by Con Edison in the Hamlet of Verplanck, New York.

90. The Stony Point to Yorktown Take-up and Relay segment of the AIM Project will also cross the Hudson River onto the same Con Edison parcel in Verplanck. The proposed pipeline will cross the West Point Transmission Project's high-voltage direct-current cable route at about MP 3.9 (9th Street), and then run parallel to the transmission line route at an offset of 50 feet, as both projects proceed easterly toward the Con Edison parcel. At the Con Edison parcel, the proposed pipeline will be located about 50 feet west of WPP's proposed converter station. North of the converter station, the proposed pipeline and the transmission line will again run parallel to one another for a distance of about 1,000 feet. WPP modified its proposed transmission line alignment to closely parallel Algonquin's workspace in this manner to reduce impacts on residential areas in the Hamlet of Verplanck. This will allow a reduction in WPP's construction time and construction impacts, as WPP will be able to rely on construction workspace already cleared by Algonquin. Algonquin and WPP will coordinate construction schedules to avoid overlap in construction activities on the Con Edison parcel.

91. In addition, Algonquin has committed to conducting an alternating current/direct current (AC/DC) interference study and incorporating field surveys and comprehensive modeling to identify potential adverse effects on the pipeline from stray currents and from inductive, conductive, and coupling AC/DC effects from nearby AC/DC utilities. The study's purpose is to indicate specific design measures necessary to mitigate electrical interaction between the pipeline and electric transmission systems, which may include a maximum separation distance, parallel/point mitigation utilizing anodes, potentially controlled impressed current cathodic protection systems, or other measures based on engineering judgment. The final EIS concludes that a properly designed natural gas pipeline and electric transmission line running parallel to each other, even at close distances, will not result in any cumulative operational or public safety hazards.<sup>59</sup> We agree with this conclusion. However, to ensure that safety concerns about potential interactions are adequately addressed, Environmental Condition 32 in this order adopts the final EIS's recommendation to require that, before constructing the Stony Point to Yorktown Take-up and Relay segment, Algonquin file its final AC/DC interference study, documentation of all consultations with WPP, and any additional mitigation measures to address safety-related issues.

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<sup>59</sup> See final EIS at 4-276.



#### **h. Traffic**

92. Construction of the AIM Project will result in temporary to short-term increases in traffic levels due to the construction workforce commuting to the project area, as well as the movement of construction vehicles and delivery of equipment and materials to the construction work area. In-street construction will also occur along the West Roxbury Lateral. To address traffic impacts related to road crossings and in-street construction in densely populated areas, Algonquin prepared Traffic Management Plans for both the West Roxbury Lateral and for pipeline segments in New York. The plans include measures to address motor vehicles, including parking, and considerations for pedestrians, bicycles, and construction workers during construction. The final EIS identifies several road crossings in New York as needing additional site-specific details.<sup>60</sup> Therefore, Environmental Condition 25 of this order requires that, before construction in New York, Algonquin file a revised Traffic Management Plan for the New York pipeline segments.

93. In-street construction will affect traffic in the project area along the West Roxbury Lateral in Massachusetts, and may affect on-street parking and use of sidewalks adjacent to the affected roadways. As stated in the final EIS, Algonquin will consult with each municipality along the project corridor to address potential traffic-related impacts, and will obtain road crossing permits from the applicable federal, state, and local agencies, including the City of Boston and the Town of Dedham, before conducting in-street construction. Environmental Condition 26 of this order requires that, before construction of the West Roxbury Lateral, Algonquin develop and file a detailed construction schedule for each segment of the lateral that includes the proposed construction timeframes (i.e., month, week, and days), working hours, and any restricted work hours. The schedule will be shared with each affected municipality, and during construction of the West Roxbury Lateral the schedule will be updated and provided to the municipalities on a biweekly basis and included in Algonquin's construction status reports required by Environmental Condition 8.

94. The final EIS concludes that two specific intersections could experience significant adverse traffic impacts as a result of construction of the West Roxbury Lateral: (1) the intersection of High Street, East Street, and Harris Street in a residential area in the Town of Dedham; and (2) the intersection of Spring Street and Centre Street in a residential area in West Roxbury.

95. The intersection of High Street, East Street, and Harris Street currently operates acceptably under peak-hour conditions and during a typical weekday midday period. The

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<sup>60</sup> See final EIS at 4-187.

required lane closures at this intersection, however, will result in adverse impacts on traffic operations during the course of construction, especially during the weekday midday period. To reduce impacts at this intersection, and at the request of the Town of Dedham, Algonquin will construct during nighttime hours (i.e., 7:00 p.m. to 5:00 a.m.). The final EIS concludes that this will not eliminate all traffic-related impacts at this intersection, but will reduce the impacts to less than significant levels.<sup>61</sup>

96. Similarly, the intersection of Spring Street and Centre Street generally operates acceptably throughout the day under existing conditions. During construction of the West Roxbury Lateral, however, the northbound Centre Street right-turn lane will be blocked off temporarily. This will be limited to only one phase of four traffic management phases planned for this location. Nonetheless, lengthy delays will occur on the northbound Centre Street approach to the intersection. Algonquin will have police details in place to monitor traffic conditions and make adjustments as required, will schedule work in the vicinity of this intersection before late afternoon commuter peak periods, and will consider performing the work during the nighttime hours if requested by the City of Boston. Although nighttime construction will minimize traffic impacts, it will increase noise-related impacts on residential properties located in close proximity to this intersection. The final EIS concludes that there will be temporary, but significant, unavoidable impacts at this intersection during construction.<sup>62</sup>

**i. Property Values and Homeowners' Insurance**

97. Commenters expressed concerns about the project's potential impacts on property values. Their concerns included devaluation of property if encumbered by a pipeline easement, being the responsible party for property taxes within a pipeline easement, changes to mortgage rates based on proximity to a pipeline, and negative economic effects resulting from changes in land use. Although Algonquin will acquire new temporary (i.e., construction) and permanent easements for the project where applicable, the final EIS clarifies that most of the pipeline segments will be installed within Algonquin's existing right-of-way, with the exception of the West Roxbury Lateral. Further, the majority of the pipeline segments will replace existing pipeline in the same location, and will not require a new pipeline easement. While the West Roxbury Lateral will require new permanent pipeline easements, the majority of the new pipeline will be located within streets or public property, and therefore will not require new pipeline easement on individual private properties. Most of the aboveground facilities associated with the project will modify existing facilities on properties owned by Algonquin. Where

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<sup>61</sup> See final EIS at 4-190.

<sup>62</sup> See final EIS at 4-190 to 4-191.

new easements on private property are required, the final EIS states that Algonquin will compensate landowners for the easements, the temporary loss of land use, and any damages.

98. In addition, affected landowners who believe that their property values have been negatively impacted can appeal to local tax agencies for reappraisal and potential reduction of taxes. The final EIS states that our staff is not aware of any practice by mortgage companies to re-categorize properties based on proximity to pipelines, nor of federally insured mortgages being revoked based on proximity to pipelines. The final EIS concludes that the project is not likely to negatively impact property values or influence mortgage rates outside the pipeline rights-of-way or aboveground facility boundaries.<sup>63</sup>

99. Commenters also expressed concerns about the project's potential to have negative impacts on their homeowners' insurance, such as increases in premiums, reductions in coverage, or inability to obtain insurance due to proximity to a pipeline. Insurance advisors consulted on other natural gas pipeline projects reviewed by the Commission indicated that pipeline infrastructure does not affect homeowner insurance rates. The final EIS concludes that homeowners' insurance rates are unlikely to change due to construction and operation of the project.<sup>64</sup>

#### **j. Air Quality**

100. Commenters expressed concerns about air quality impacts and the associated health effects resulting from the project facilities, including the Stony Point and Southeast Compressor Stations in New York. The final EIS concludes that due to modifications on existing equipment and removal of existing compressors, the potential emissions of most pollutants at the Stony Point and Southeast Compressor Stations will be reduced from their current potential levels. Further, based on the identified estimated emissions from operation of the proposed project facilities and review of the modeling analysis for all compressor stations, the final EIS concludes that the project compressor station modifications will result in continued compliance with the National Ambient Air Quality Standards, which are protective of human health, including children, the elderly, and sensitive populations. Therefore, with the mitigation measures proposed by Algonquin, the final EIS concludes that construction and operation of the proposed

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<sup>63</sup> See final EIS at 4-193 to 4-194.

<sup>64</sup> *Id.*

project facilities will not have a significant impact on air quality in the project area or region.<sup>65</sup>

101. Commenters also expressed specific concern about methane emissions released from the project. As described in the final EIS, Algonquin provided a summary of practices to minimize methane emissions that will be implemented at modified compressor stations associated with the project, and that are currently implemented at its other facilities. Specifically, Algonquin will use highly efficient turbine technology at the modified compressor stations, which will minimize emissions because the technology will be appropriately sized and efficient, and will include dry seals. Algonquin also has a program in place for minimizing methane emissions at all of their facilities. Measures include replacing wet seals with dry seals at compressors, replacing older infrastructure to reduce blowdowns, installing leak detection monitoring systems, and participating in the EPA's National Gas Star Program to share best practices for reducing methane emissions. We believe these measures will be sufficient to adequately address any potential issues related to methane emissions from the project.

102. We also received several comments concerning the risk of radon exposure associated with in-home burning of natural gas originating from the Marcellus shale. While the Commission has no regulatory authority to set, monitor, or respond to indoor radon levels, many local, state, and federal entities (e.g., the EPA) establish and enforce radon exposure standards for indoor air. Studies have demonstrated that levels of radon in interstate pipelines carrying gas from the Marcellus shale will be below average indoor and outdoor radon levels.

103. We also received comments concerning the potential buildup of decay products within the pipeline and the risk of releasing these products to the environment either during pipeline maintenance or the removal of existing pipe. The final EIS states that the half-lives of the radioactive decay products are relatively short and that, over time, these products will decay to non-radioactive lead. As a result, only a limited amount of radioactive decay material will be in the pipeline at any given time because any material that is within the pipeline for a prolonged period will become non-radioactive. Algonquin will clean the pipeline to be removed before the pipeline is reused for another purpose. Algonquin also conducts annual inspections and regular cleaning of its operational pipelines. Any liquids or solids removed during these cleanings will be collected and treated as hazardous material that will be disposed of at a licensed facility in accordance with federal, state, and local regulations. The final EIS finds that these measures will minimize the risk that any radioactive solids will be released to the environment.

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<sup>65</sup> See final EIS at 4-235 to 4-236.

104. With the mitigation measures proposed by Algonquin, the final EIS concludes that air quality impacts from construction and operation of the proposed AIM Project will not result in significant air impacts on residents and the surrounding communities.<sup>66</sup>

**k. Safety**

**1. General**

105. Numerous commenters questioned the general safety of the proposed project. As described in the final EIS, the project's facilities will be designed, constructed, operated, and maintained to meet or exceed the U.S. Department of Transportation's (DOT) Minimum Federal Safety Standards set forth in Part 192 of Title 49 of the Code of Federal Regulations and in other applicable federal and state regulations.<sup>67</sup> The majority of the project will replace existing, aged pipeline with new pipeline in the same location and will not increase the risk to the nearby public. For the small portion of the AIM Project where looping or a new pipeline is proposed, the final EIS concludes that the project will represent a slight increase in risk to the nearby public.<sup>68</sup> Based on available data, the final EIS concludes that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation.

**2. Indian Point Energy Center**

106. We received comments concerning the safety of the project and its proximity to Indian Point, a nuclear facility operated by Entergy Nuclear Operations, Inc. (Entergy) on the east bank of the Hudson River in Westchester County, New York. As identified in the final EIS, Algonquin coordinated with Entergy to provide information about the proposed pipeline and Entergy performed a safety evaluation of the pipeline information.<sup>69</sup> Entergy's Safety Evaluation incorporates additional design and installation enhancements along approximately 3,935 feet of the AIM Project pipeline where it will lie closest to the Indian Point facility, i.e., 0.5 mile from Indian Point's security barrier. Algonquin will extend the mitigation measures outlined in the Safety Evaluation to the entire area between MPs 4.6 and 5.3 along the Stony Point to Yorktown

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<sup>66</sup> See final EIS at 4-235 to 4-245.

<sup>67</sup> See final EIS at 4-264 to 4-272.

<sup>68</sup> See final EIS at 4-281.

<sup>69</sup> See final EIS at 4-276 to 4-278.

Take-up and Relay segment. The Safety Evaluation concluded that the AIM Project poses no increased risks to the Indian Point facility.

107. On August 21, 2014, Entergy filed its Safety Evaluation for the AIM Project with the Nuclear Regulatory Commission (NRC). The NRC reviewed the site hazards analysis performed by Entergy and performed an independent confirmatory analysis of the blast analysis as well. The NRC's analysis did not account for the additional pipeline design measures identified by Entergy and committed to by Algonquin, and assumed a pipeline catastrophic failure. The review covered everything within the Security Owner Controlled Area, which encompasses everything inside the outermost fenced area of the facility including the area with the spent fuel rods. The NRC concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the Indian Point facility. Therefore, the final EIS concludes that the project will not result in increased safety impacts at the Indian Point facility.

### **I. Atlantic Bridge Project and Segmentation**

108. Several commenters claim that the AIM Project is improperly segmented from other expansions of Algonquin and Spectra's interstate system known as the Atlantic Bridge and Access Northeast Projects.

109. Improper segmentation of a project occurs when interrelated projects are artificially divided into smaller, less significant components to avoid comprehensive environmental review under NEPA. Improper segmentation, however, is concerned with projects that have reached the proposal stage,<sup>70</sup> which is not the case here. Section 102(C) of NEPA requires agencies to prepare an environmental document for "proposals" for major federal actions affecting the human environment.<sup>71</sup> The CEQ's regulations state that "proposals" exist when the action is at the stage when "an agency subject to the Act has a goal and is actively preparing to make a decision . . . and the effects [of that action] can be meaningfully evaluated."<sup>72</sup>

110. The Atlantic Bridge and Access Northeast Projects are still in the development phase and precedent agreements are under consideration. Algonquin just filed a request

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<sup>70</sup> See, e.g., *Transcontinental Gas Pipe Line Company, LLC*, 149 FERC ¶ 61,258, at P 66 (2014).

<sup>71</sup> 42 U.S.C. § 4332(2)(C) (2012).

<sup>72</sup> 40 C.F.R. § 1508.23 (2014).

for approval of pre-filing review process for the Atlantic Bridge Project on January 30, 2015, which Commission staff approved on February 20, 2015. As for the Access Northeast Project, Algonquin is still evaluating the project's potential development based on interest for additional natural gas supplies in New England and the Canadian Maritime provinces. Algonquin has not filed an application with the Commission for either project. Without an application, the Commission cannot actively prepare to make a decision on the projects and the effects of the projects cannot be meaningfully evaluated. Therefore, the Atlantic Bridge and Access Northeast Projects are not fully defined "proposals" and cannot be segmented by the Commission from its environmental review of the AIM Project under NEPA.

111. This situation is factually and legally distinct from the case *Delaware Riverkeeper Network v. FERC*,<sup>73</sup> which commenters cite in support of their segmentation arguments. That case considered four pipeline upgrades on a single mainline, all of which were either proposed and before the Commission or under construction at the same time. As the Atlantic Bridge and Access Northeast Projects are not proposals before the Commission, the scope of the EIS was appropriately limited to evaluation of impacts of the AIM Project. In any event, potential cumulative impacts of the Atlantic Bridge and Access Northeast Projects are discussed in the cumulative impacts section in the final EIS and below.

**m. Cumulative Impacts**

112. We received numerous comments pertaining to additional actions to be considered in the cumulative impacts section, specifically the Atlantic Bridge and Access Northeast Projects, and natural gas extraction in the Marcellus shale.

113. The CEQ regulations define cumulative impacts as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions."<sup>74</sup> A cumulative impacts analysis may require an analysis of actions unrelated to the proposed project if they occur in the project area or region of influence of the project being analyzed.<sup>75</sup> CEQ states that "it is not practical to analyze the cumulative effects of an action on the universe; the list

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<sup>73</sup> *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304 (D.C. Cir. 2014).

<sup>74</sup> 40 C.F.R. § 1508.7 (2014).

<sup>75</sup> CEQ Guidance, *Considering Cumulative Effects under the National Environmental Policy Act* (January 1997).

of environmental effects must focus on those that are truly meaningful.”<sup>76</sup> An agency is only required to include “such information as appears to be reasonably necessary under the circumstances for evaluation of the project rather than to be so all-encompassing in scope that the task of preparing it would become either fruitless or well nigh impossible.”<sup>77</sup>

114. An impact is “reasonably foreseeable” if it is “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.”<sup>78</sup> Courts have noted that the starting point of any NEPA analysis is a “rule of reason,” under which NEPA documents “need not address ‘remote and highly speculative consequences.’”<sup>79</sup>

115. Consistent with CEQ guidance, to determine the scope of the cumulative impact analysis in an EIS, Commission staff establishes a “region of influence” to define the area affected by the proposed action in which existing and reasonably foreseeable future projects may also result in cumulative impacts. A project's region of influence varies depending on the resource being discussed.

116. Impacts on geology and soils, land use, residential areas, visual resources, cultural resources, and traffic by the AIM Project will be highly localized. Therefore, the final EIS evaluated other projects (e.g., residential development, small commercial development, small transportation projects) within 0.25 mile of the construction work areas. Waterbody and wetland crossings, as well as impacts on groundwater, vegetation, and wildlife by the AIM Project will be localized and minimized. Therefore, the final EIS evaluated other projects within the sub-watersheds crossed by the AIM Project. The AIM Project compressor stations will result in long-term impacts on air quality in various Air Quality Control Regions. Therefore, other projects with the potential to result in long-term impacts on air quality (e.g. natural gas compressor stations or industrial facilities) within the Air Quality Control Regions that will also be impacted by an AIM Project compressor station were considered in the final EIS. Long-term noise impacts from the AIM Project compressor stations will be localized to within one mile of each station. Therefore, the final EIS evaluated other projects that will result in long-term

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<sup>76</sup> *Id.* p. 8.

<sup>77</sup> *New York Natural Res. Def. Council, Inc. v. Kleppe*, 429 U.S. 1307, 1311 (1976) (citing *Natural Res. Def. Council v. Calloway*, 524 F.2d 79, 88 (2d. Cir. 1975).

<sup>78</sup> *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992).

<sup>79</sup> *Hammond v. Norton*, 370 F. Supp. 2d 226, 245-46 (D.D.C. 2005).



impacts on noise affecting the same noise-sensitive areas as the AIM Project compressor stations.

117. The final EIS discussion of the potential for cumulative impacts with both the Atlantic Bridge Project<sup>80</sup> and the Access Northeast Project<sup>81</sup> is set forth in section 4.13 and is based on publicly available information and assumptions regarding pipeline distance, collocation, right-of-way width, and pipeline diameter. The contemplated Atlantic Bridge Project will generally consist of replacing sections of existing pipeline with new larger diameter pipeline, installing pipeline adjacent to sections of existing pipeline, increasing compression at existing compressor stations, and modifying a number of existing meter stations to provide for increased deliveries. The specific details about the Atlantic Bridge Project are currently not fully developed and no application for the project has been filed. The information that was publically available at the time Commission staff published the final EIS indicated that the project may include 52.5 miles of new loop and replacement of existing pipeline and additional compression at six existing Algonquin compressor stations and one new compressor station. As contemplated at the time, all 52.5 miles would be within or adjacent to existing rights-of-way, consisting primarily of Algonquin's pipeline right-of-way, and including small areas of public roadways, railways, and other utility rights-of-way.

118. If the Atlantic Bridge Project were to move forward, it does appear that there would be Atlantic Bridge Project facilities within the same region of influence as the AIM Project. As discussed in the final EIS, impacts associated with the Atlantic Bridge Project would be similar to those of the AIM Project (i.e., short term and localized during construction). Although the same region of influence would be affected, the temporal scales for the construction of the projects are different. AIM Project construction is planned for 2015 and 2016. Construction of the Atlantic Bridge Project would likely take place after that time, as the earliest projected in-service date for the Atlantic Bridge Project is November 2017. If the Atlantic Bridge Project gets constructed, the operation of compressor stations will overlap, as will the operational air emissions of the projects. Even so, minimal cumulative impacts are anticipated when the impacts of the AIM Project are added to identified ongoing projects in the immediate area, including the Atlantic Bridge Project.<sup>82</sup> The final EIS finds that cumulative impacts will be minimal

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<sup>80</sup> See final EIS at 4-288 to 4-290.

<sup>81</sup> See final EIS at 4-290.

<sup>82</sup> Based on Algonquin's January 23 pre-filing request letter, however, cumulative impacts will be less than Commission staff concluded in the final EIS. The January 23 pre-filing request letter states that the scope of the Atlantic Bridge Project has fewer miles of pipe and less compression than what Commission staff considered.

because of the implementation of specialized construction techniques, the relatively short construction timeframe in any one location, and carefully developed resource protection and mitigation plans designed to minimize and control environmental impacts for the AIM Project as a whole.

119. Regarding the Access Northeast Project, Algonquin's website indicates that it hoped to secure expression of interest from potential customers by the end of 2014, but it does not provide any information about the size or location of the proposed facilities. Algonquin indicates that, if they receive adequate market support, it will begin seeking regulatory approvals in 2015 with a goal of constructing and placing the facilities in service by the end of 2018. Because the Access Northeast Project will not occur at the same time as the AIM Project, and because details are unknown, Commission staff did not consider it further in the cumulative impact assessment in the final EIS.

120. In addition, commenters, including the Allegheny Defense Project (Allegheny), allege that the EIS does not adequately consider the cumulative impacts of natural gas extraction. Allegheny argues that environmental impacts associated with continued development of the Marcellus shale are reasonably foreseeable consequences of the AIM Project because it asserts shale is the reason the project is being proposed and, therefore, should be quantified to the same extent as the impacts of the proposed project.

121. Allegheny disagrees with the draft EIS's statement that it is highly difficult and speculative to identify and quantify cumulative impacts of natural gas production. In support, Allegheny cites to U.S. Forest Service's EIS for the Allegheny National Forest Land and Resource Management Plan, which recorded existing wells and projected additional wells by 2020. Allegheny also references a report published by the Nature Conservancy in cooperation with Western Pennsylvania Conservancy and Audubon Pennsylvania, which projected Marcellus shale gas extraction and pipeline construction that will occur by 2030.

122. The CEQ guidance on cumulative impacts assessments advises that agencies have substantial discretion in determining the appropriate level of the cumulative impacts assessments.<sup>83</sup> CEQ states that an agency should relate the scope of its analysis to the magnitude of the environmental impacts of the proposed action. Given the geographic scope of the Marcellus shale, development of those resources will extend well beyond the region of influence considered for inclusion in the cumulative impact analysis for the

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<sup>83</sup> The Supreme Court has similarly held that "determination of the extent and effect of [cumulative impacts], and particularly identification of the geographic area within which they may occur, is a task assigned to the special competency of the appropriate agencies." *Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976).

AIM Project. Given the limited scope of the AIM Project, the broader cumulative effects analysis sought by Allegheny and other commenters is not required under NEPA.

123. Moreover, any impacts from potential upstream production activities are not reasonably foreseeable as contemplated by CEQ's regulations. As the final EIS explains, we can only speculate regarding the exact location, scale, scope and timing of future production-related facilities, which would not provide meaningful information to inform our decision here.<sup>84</sup>

124. As noted above, CEQ guidance recognizes that agencies have substantial discretion in determining the appropriate scope of their cumulative impacts analyses. Therefore, the fact that the Forest Service found cumulative effects of natural gas development sufficiently reasonably foreseeable for purposes of informing its actions in developing the Land and Forest Management Plan of the Allegheny National Forest (Forest Plan) is not controlling here. The Forest Service was developing a plan to guide the management of the Allegheny National Forest. Among other things, it is a goal of the Forest Service to protect publicly-owned surface resources from disturbance by oil and gas development.<sup>85</sup> The Forest Service's action covered a geographically distinct area, i.e., the Allegheny National Forest, and the EIS focused on the existing activity within that area, estimating that there were 8,000 wells in production and 1,250 miles of oil and gas roads.<sup>86</sup> Those circumstances are quite different from the situation here.

125. Allegheny also fails to show that the explanatory information in the cited Nature Conservancy's report, or elsewhere, identifies information that would assist the Commission in identifying the timing and location of wells and related infrastructure, much less the associated potential impacts of natural gas drilling, in the project area. As we have found, the full range of Marcellus shale development is both widespread and

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<sup>84</sup> See final EIS at 1-5.

<sup>85</sup> See U.S. Forest Service, Allegheny National Forest Record of Decision for Final Environmental Impact Statement and Land and Resource Management Plan (March 2007), *available at* [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5044088.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5044088.pdf).

<sup>86</sup> See *id.* at 3-163.

uncertain in nature and timing, making it highly difficult and speculative to identify and quantify cumulative impacts of possible future drilling relating to pipeline projects.<sup>87</sup>

126. Allegheny cites *Northern Plains Resource Council et al. v. Surface Transportation Board et al. (Northern Plains)*<sup>88</sup> in support of its contention that future production is reasonably foreseeable. *Northern Plains* addressed the issue of whether the Surface Transportation Board should have considered the cumulative impacts of coal bed methane (CBM) well development as part of its NEPA analysis of a proposed 89-mile-long rail line intended to serve specific new coal mines in three Montana counties. *Northern Plains* is distinguishable because, as part of an earlier, programmatic EIS, the Bureau of Land Management had already analyzed reasonably foreseeable CBM well development, which provided the Surface Transportation Board with information about the timing, scope, and location of future CBM well development. Here, the Commission has no similar information in the present case about the timing, location, and scope of future shale (or conventional) well development in the project area. Moreover, as the Commission has previously found, *Northern Plains* establishes that while agencies must engage in reasonable forecasting in considering cumulative impacts, NEPA does not require an agency to “engage in speculative analysis” or “to do the impractical, if not enough information is available to permit meaningful consideration.”<sup>89</sup>

**n. Indirect Impacts**

127. We received numerous comments about indirect impacts of induced natural gas production in the Marcellus shale region in response to demand from Algonquin's customers. CEQ's regulations require agencies to consider the indirect impacts of proposed actions. Indirect impacts are “caused by the [proposed] action” and occur later in time or farther removed in distance than direct project impacts, but are still “reasonably foreseeable.”<sup>90</sup> Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or

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<sup>87</sup> See *Central New York Oil & Gas Co. LLC*, 138 FERC ¶ 61,104, at P 7 (2012) upheld by *Coalition for Responsible Growth and Resource Conservation v. FERC*, 485 Fed. Appx. 472 (2d Cir. 2012).

<sup>88</sup> 668 F.3d 1067 (9th Cir. 2011).

<sup>89</sup> *Sabine Pass Liquefaction LLC*, 140 FERC ¶ 61,076, at P 17 (2012) (citing *Northern Plains*, 668 F.3d 1067 (9th Cir. 2011)).

<sup>90</sup> 40 C.F.R. § 1508.8(b) (2014).

growth rate, and related effects on air and water.<sup>91</sup> For an agency to include consideration of an impact in its NEPA analysis as an indirect effect, approval of the proposed project and the related secondary effect must be causally related, i.e., the agency action and the effect must be “two links of a single chain.”<sup>92</sup>

128. The potential environmental effects associated with shale gas development are neither sufficiently causally related to the AIM Project to warrant a detailed analysis nor are the potential environmental impacts reasonably foreseeable, as contemplated by the CEQ regulations.<sup>93</sup> Additional natural gas production in any particular region is not an essential predicate for the AIM Project, which can receive natural gas through its interconnects with other natural gas pipelines. These interconnecting pipeline systems span multiple states with shale formations in the northeast, as well as conventional gas formations. Further, unconventional production development will likely continue regardless of whether the AIM Project is approved.

129. The Clean Air Council cites *Natural Resource Defense Council, Inc. v. Federal Aviation Administration*<sup>94</sup> to support its position that the AIM Project will cause indirect impact by encouraging increased Marcellus shale production. The facts and outcome of that case, however, undercut the Clean Air Council’s argument. In that case, petitioners argued that the Federal Aviation Administration’s (FAA) FEIS for its approval of a proposal to construct a new airport violated NEPA because the FAA failed to consider the environmental impacts of induced growth caused by the proposed airport. The court dismissed petitioners’ arguments stating “[i]n fact, the agency did consider the effects of induced growth as part of its analysis . . .”<sup>95</sup> Similarly, here Commission staff’s final EIS considered growth inducing impacts of the AIM Project. The final EIS for the AIM

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<sup>91</sup> *Id.*

<sup>92</sup> *Sylvester v. U.S. Army Corps of Engineers*, 884 F.2d 394, 400 (9th Cir. 1989).

<sup>93</sup> See, e.g., *Central New York Oil and Gas Co., LLC*, 137 FERC ¶ 61,121, at PP 81-101 (2011), *order on reh'g*, 138 FERC ¶ 61,104, at PP 33-49 (2012), *petition for review denied, sub nom, Coalition for Responsible Growth v. FERC*, 485 Fed. Appx. at 474-75 (upholding the Commission’s analysis of the development of Marcellus shale natural gas reserves where the Commission reasonably concluded that the impacts of that development were not sufficiently causally-related to the projects to warrant a more in-depth analysis).

<sup>94</sup> 564 F.3d 549 (2d Cir. 2009).

<sup>95</sup> *Id.* at 560.

Project forecasts that the new West Roxbury Lateral may support long-term growth in the Boston area, as well as enhance and reinforce the existing Boston gas delivery system and reliability during outage situations. The final EIS also states that local distribution companies benefiting from the AIM Project expansion may build additional lines to serve their new customers, but that it is speculative to assume where the new lines would go and the resulting impacts.<sup>96</sup>

130. Natural gas development, including development of the Marcellus shale region, will continue and indeed is continuing, with or without the AIM Project, because multiple existing and proposed transportation alternatives for production from the region are available. Thus, there is an insufficient causal link between the proposed project and additional development of the Marcellus shale region for such development to be considered an indirect impact under NEPA and CEQ's regulations. And even if such a causal relationship were shown, as we discussed above, the scope of the impacts from any such induced production is not reasonably foreseeable as contemplated by CEQ's regulations and case law.

**o. Alternatives**

131. Numerous commenters expressed concern with the pipeline project's route and stressed the need for additional analysis of alternatives. Section 3.0 of the final EIS evaluates a range of alternatives to the AIM Project, including the no-action alternative, energy conservation, renewable energy alternatives, system alternatives, route alternatives, and minor route variations, to determine whether they are technically and economically feasible and environmentally preferable.<sup>97</sup>

132. The final EIS evaluates a route alternative at the Hudson River crossing of the Stony Point to Yorktown Take-up and Relay segment and addresses the geological and constructability issues along Algonquin's existing mainline. The final EIS also evaluates two route alternatives along the proposed West Roxbury Lateral to address impacts on existing land uses, primarily residential and commercial areas. For various reasons discussed in detail in section 3.5 of the final EIS, these alternatives were not selected over the proposed route.<sup>98</sup>

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<sup>96</sup> Final EIS at 4-290 to 4-291.

<sup>97</sup> See final EIS at 3-1 to 3-55.

<sup>98</sup> See final EIS at 3-20 to 3-52.

133. Following issuance of the draft EIS, Algonquin evaluated the following nine route variations: Hudson River HDD Variation, Blue Mountain Reservation Variation, Catskill Aqueduct Variation, Neponset River State Park and Stony Brook State Reservation Alternative, Norfolk Golf Club Variation, Massachusetts Bay Transit Authority Variation, Gonzalez Field Variation, Mother Brook Variation, and St. Theresa Parish and School Variation. Thereafter, we received comments requesting that we evaluate additional alternatives and variations to the proposed route. The final EIS includes an analysis of these nine route variations.<sup>99</sup> With the exception of the Blue Mountain Reservation and Neponset River State Park and Stony Brook State Reservation alternatives, Algonquin concluded that the remaining seven variations were determined to be advantageous to the original route and incorporated them into the project.

134. Algonquin also evaluated 23 minor pipeline shifts, workspace adjustments, and design modifications following issuance of the draft EIS. The final EIS includes a more detailed review of these proposed changes.<sup>100</sup> Nineteen of these proposed changes were determined to be advantageous and Algonquin incorporated these into the project. The final EIS also evaluated alternative construction methods for several waterbody and wetland crossings, but found none that would be feasible or preferable to the proposed construction methods.

#### **4. Late Comments Not Addressed in the Final EIS**

135. All written comments received from August 6, 2014, to October 10, 2014, were included and addressed in Volume II of the final EIS. Two-hundred sixty-two letters were filed too late to be considered in the final EIS, and 23 comments were filed after issuance of the final EIS. Letters received after October 10, 2014, continued to be posted to the eLibrary site and were reviewed by staff for additional new substantive concerns. The majority of the letters contained issues that had already been raised in previous comment letters and were therefore already addressed in the final EIS. Five comment letters were received after October 10, 2014, that identified new issues and these are addressed below.

##### **a. Cortlandt Farm Market, LLC**

136. On December 17, 2014, the owners of the Cortlandt Farm Market, LLC (Farm Market) submitted a comment regarding a workspace addition that Algonquin incorporated into the project design after the issuance of the draft EIS. The additional

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<sup>99</sup> See final EIS at 3-31 to 3-44.

<sup>100</sup> See final EIS at 3-45 to 3-51.

workspace adds about 0.15 acre to the previously-depicted workspace at about MP 10.4 of the Stony Point to Yorktown Take-up and Relay segment. Algonquin modified the workspace to provide sufficient space to dismantle an existing deck structure owned by the Farm Market, which Algonquin indicated will pose a potential safety hazard during construction. The owners assert that removing the deck and adding workspace within the Farm Market's parking lot will significantly affect the income of the business.

137. As the final EIS indicates, Algonquin will compensate all landowners for any new easements, temporary loss of land use, or damages resulting from project construction,<sup>101</sup> including the owners of Farm Market. Algonquin will also restore the property to preconstruction conditions following the completion of construction, and has specifically committed to replacing the dismantled deck on the Farm Market's property.

**b. Westchester County Legislator Peter B. Harckham**

138. On January 14, 2015, Westchester County Legislator Peter B. Harckham filed a comment that attached a report prepared by Erik Kiviat, Ph.D.<sup>102</sup> The report describes the existing habitat and the potential occurrence of plants and animals of conservation concern within the Blue Mountain Reservation and the Reynolds Hills residential area. Legislator Harckham asserts that the draft EIS did not discuss biodiversity impacts within the Blue Mountain Reservation with adequate specificity, and that flora, fauna, and habitat within the reservation should be re-evaluated using the Kiviat Report as a starting point before the Commission issues a certificate for the project.

139. The Kiviat Report asserts that the Blue Mountain Reservation contains potential habitat for several special status species. The report's characterization of potential habitat in the project area is based on previous observations of habitat within different pipeline rights-of-way in other locations, as well as Dr. Kiviat's observations of conditions within the Blue Mountain Reservation. We do not agree that these observations necessitate additional surveys within the Blue Mountain Reservation.

140. As documented in the final EIS, Algonquin consulted with the appropriate jurisdictional agencies to identify special status species that may occur within the project area. Algonquin consulted with the New York State Department of Environmental Conservation (New York DEC) New York Natural Heritage Program regarding the

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<sup>101</sup> See final EIS at 4-193.

<sup>102</sup> The report is titled "Preliminary Biodiversity Assessment of the Algonquin Gas Pipeline at Reynolds Hill and Blue Mountain Reservation, City of Peekskill and the Town of Cortlandt, Westchester County, New York."



documented occurrences of state protected species in New York, conducted surveys as requested by the New York DEC and in accordance with approved protocols, and continues to coordinate with the New York DEC regarding the facilities' impacts on protected species. Any additional avoidance or minimization measures required by the New York DEC will be addressed through consultation with the New York DEC and during the New York DEC permitting process for the project. Algonquin also consulted with the U.S. Fish and Wildlife Service (FWS) on federally protected species and migratory birds, and conducted surveys as recommended by the FWS in accordance with approved protocols.

141. Algonquin will implement species-specific measures when applicable and its E&SCP during project construction and restoration, as well as any permit conditions developed through consultation with New York DEC to minimize project effects on wildlife and their habitats. The final EIS concludes that these measures will minimize project effects on vegetation and wildlife populations.<sup>103</sup> Therefore, we do not find that any additional surveys are necessary to minimize effects on species specifically within the Blue Mountain Reservation. Westchester County and Algonquin may agree upon further measures as a condition of the county's authorization of workspace outside Algonquin's existing maintenance easement, but any such conditions are outside the scope of our NEPA review.

142. The Kiviat Report also states that the project right-of-way within the Blue Mountain Reservation should be checked by an independent wetland delineator for undelineated or under-delineated wetlands. Qualified wetland scientists, however, have already conducted full wetland delineations for the project area in 2013 in accordance with the methodologies described in the 1987 USACE Wetlands Delineation Manual and the 2011 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2). The final EIS accurately summarizes the project's impacts on wetlands in New York based on these delineations.<sup>104</sup> Construction and operation-related impacts on wetlands will be mitigated by implementing the wetland protection and restoration measures contained in Algonquin's E&SCP, Invasive Plant Species Control Plan, and any additional conditions of the wetland permits that could be issued by the Corps or New York DEC. Algonquin will also provide compensatory mitigation for the permanent conversion of forested wetlands to a non-forested wetland type. Implementation of a final, agency-approved Wetland Mitigation Plan will further offset any adverse impacts on wetland functions that result from the permanent

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<sup>103</sup> See final EIS at 4-84 and 4-92.

<sup>104</sup> See final EIS at 4-62.

conversion of these wetlands. Therefore, we do not agree that it is necessary to repeat wetland delineations within the Blue Mountain Reservation.

143. Finally, the Kiviat Report states that AIM Project funds should be put into escrow for a full-time independent environmental monitor administered by a town conservation advisory council, a county agency, or the New York DEC. As indicated in section 2.5 of the EIS, the Commission will implement a third-party Environmental Compliance Monitoring Program for sensitive environmental areas in the project area, including those in New York.<sup>105</sup> Under this program, Algonquin will fund a contractor, to be selected and managed by Commission staff, to provide environmental compliance monitoring services. We conclude that our Environmental Compliance Monitoring Program will provide sufficient oversight of the project in New York without the need for an additional or separate monitor.

**c. John Louis Parker**

144. On January 23, 2015, John Louis Parker, an attorney for Reynolds Hills, filed a comment stating that under the Clean Water Act the Commission cannot authorize a project until a state water quality certificate has been issued. As demonstrated in the EIS, it is impractical, and sometimes impossible, to complete studies and develop plans to mitigate potential adverse aspects of a project in advance of issuing a final order. This can be because many post-authorization conditions require site-specific plans and surveys that cannot be completed until the applicant is able to employ eminent domain to gain access to previously inaccessible land parcels.

145. We stress that this order's authorization is subject to Algonquin's compliance with numerous specific conditions, including the requirement to obtain favorable determinations from other agencies that have jurisdiction over various aspects of the project. Consequently, we find no need to delay issuing our decision, given that our authorizations are conditioned to preclude the applicants from commencing construction until all other necessary permits and approvals under federal law are granted, including water quality certificates under the Clean Water Act.<sup>106</sup>

**d. Bernard Vaughey**

146. On January 29, 2015, Bernard Vaughey filed a comment regarding potential conflicts between the project construction and the emergency evacuation plans for the

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<sup>105</sup> See final EIS at 2-40 to 2-41.

<sup>106</sup> See Environmental Condition 9 in Appendix B to this order.

Indian Point facility. Mr. Vaughey believes that project construction will impact multiple roads within the Indian Point Emergency Planning Zone. He expresses concern that the traffic disruptions associated with open-cut road crossings could impede emergency response or evacuation efforts at Indian Point. Thus, he calls for site-specific traffic control plans for road crossings within the Emergency Planning Zone.

147. The final EIS includes Algonquin's Traffic Management Plan for the New York Pipeline Segments. The Traffic Management Plan identifies several road crossings in New York that require additional site-specific detail. The final EIS recommends, and Environmental Condition 25 of this order requires, that Algonquin file these site-specific details with the Commission before commencing construction in New York.

Additionally, the final EIS provides detail on construction procedures for open-cut road crossings.<sup>107</sup> Any open trench across a roadway will either be backfilled or covered with a steel plate during all non-working hours. Steel plates will be kept on site during construction at all open-cut road crossings so that access can be maintained for emergency vehicles. Because access will be maintained, we find that project construction will not impact the emergency response and evacuation plans associated with the Indian Point Emergency Planning Zone.

**e. Tribal Consultation**

148. On January 30, 2015, the Tribal Historic Preservation Officers (THPO) representing the Mashantucket Pequot Tribal Nation, Mohegan Tribe, Narragansett Tribe of Indians, and Wampanoag Tribe of Gay Head (Aquinnah) filed comments stating that the Commission has delegated consultation responsibilities to Spectra's environmental consultant, Public Archaeology Lab, Inc. (PAL). The THPOs request that the Commission make a "reasonable and good faith effort" to identify historic properties, including consulting with the tribes to identify and assess adverse effects to historic properties, and submit written notification stating how the Commission intends to meet the remaining National Historic Preservation Act (NHPA) section 106 requirements. If adverse effects to historic properties occur, the THPOs state that the Commission shall develop a Memorandum of Agreement (MOA). In addition, the THPOs formally request to consult with the Commission and enter into an agreement on how the section 106 responsibilities will be carried out in this proceeding.

149. As stated in the January 26, 2015 letter from the Chairman to Kitcki Carroll, United South and Eastern Tribes, Inc., the Commission does not delegate government-to-government tribal consultation to regulated companies or their representatives. Companies can assist the Commission in complying with NHPA section 106 by gathering

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<sup>107</sup> See final EIS at 2-26.

information, but the responsibility for tribal consultation remains with the Commission. We have consulted with the Mashantucket Pequot Tribal Nation, Mohegan Tribe, Narragansett Tribe of Indians, and Wampanoag Tribe of Gay Head (Aquinnah) for the project and made a good faith effort to identify historic properties.<sup>108</sup> Further, Environmental Condition 27 requires Algonquin to file the remaining survey reports and any necessary treatment plan with the appropriate State Historic Preservation Officers and Commission staff. The treatment plan will be sent to the Mashantucket Pequot Tribal Nation, Mohegan Tribe, Narragansett Tribe of Indians, and Wampanoag Tribe of Gay Head (Aquinnah) for comments. Any comments will be taken into consideration. The Commission will execute a MOA for data recovery if necessary.

## **5. Environmental Analysis Conclusion**

150. We have reviewed the information and analysis contained in the final EIS regarding potential environmental effects of the AIM Project. Based on our consideration of this information and the discussion above, we agree with the conclusions presented in the final EIS and find that the project, if constructed and operated as described in the final EIS, is an environmentally acceptable action. We are accepting the environmental recommendations in the final EIS and are including them as conditions in Appendix B to this order.

151. Any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this certificate. The Commission encourages cooperation between interstate pipelines and local authorities. However, this does not mean that state and local agencies, through application of state or local laws, may prohibit or unreasonably delay the construction or operation of facilities approved by this Commission.<sup>109</sup>

## **IV. Conclusion**

152. The Commission on its own motion received and made a part of the record in this proceeding all evidence, including the application, as supplemented, and exhibits thereto, submitted in support of the authorizations sought herein, and upon consideration of the record,

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<sup>108</sup> See final EIS at 4-201 to 4-217.

<sup>109</sup> See, e.g., *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *National Fuel Gas Supply v. Public Service Comm'n*, 894 F.2d 571 (2d Cir. 1990); *Iroquois Gas Transmission System, L.P.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

The Commission orders:

(A) A certificate of public convenience and necessity is issued authorizing Algonquin to construct and operate the AIM Project, as described in this order and in its application.

(B) The certificate authority issued in Ordering Paragraph (A) shall be conditioned on the following:

(1) Algonquin's completion of construction of the authorized facilities and making them available within two years from the date of this order, pursuant to section 157.20(b) of the Commission's regulations;

(2) Algonquin's compliance with all applicable regulations under the NGA including, but not limited to, Parts 154 and 284, and paragraphs (a), (c), (e), and (f) of section 157.20 of the Commission's regulations;

(3) Algonquin's compliance with the environmental conditions listed in Appendix B to this order.

(C) Permission and approval are granted to Algonquin to abandon certain facilities, including four compressor units at the Stony Point Compressor Station, as more fully described in this order and in its application.

(D) Algonquin shall notify the Commission within 10 days of the effective date of the abandonment of the facilities referenced in Ordering Paragraph (C).

(E) Algonquin shall execute firm contracts for the capacity levels and terms of service represented in signed precedent agreements, prior to commencing construction.

(F) Algonquin's proposed incremental rates for the mainline AIM Project and West Roxbury Lateral are approved, except as more fully discussed above.

(G) Algonquin's proposed incremental Fuel Reimbursement Percentages for the proposed AIM mainline are approved.

(H) Algonquin must file actual tariff records setting forth its incremental recourse rates in accordance with section 154.207 of the Commission's regulations and other proposed changes to its tariff records implementing the Project not less than 30 days, or more than 60 days, prior to placing the AIM Project and West Roxbury Lateral in service, as more fully discussed above.

(I) Algonquin shall notify the Commission's environmental staff by telephone or facsimile of any environmental noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Algonquin. Algonquin shall file written confirmation of such notification with the Secretary of the Commission within 24 hours.

(J) The late motions to intervene are granted.

(K) The motion for a formal hearing is denied.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

**Appendix A**

**Interventions**

**Timely, Unopposed Motions to Intervene**

- Allegheny Defense Project
- Daniel M. Barry
- Calpine Energy Services, L.P.
- City of New York, New York
- City of Peekskill, New York
- Community Watersheds Clean Water Coalition
- Connecticut Department of Energy and Environmental Protection
- ConocoPhillips Company
- Conservation Law Foundation
- Consolidated Edison Company of New York, Inc.; and Orange and Rockland Utilities Inc.
- Entergy Nuclear Indian Point 1, LLC; Entergy Nuclear Indian Point 2, LLC; Entergy Nuclear Indian Point 3, LLC; and Entergy Nuclear Operations, Inc.
- Exelon Corporation
- Food & Water Watch; Stop the Algonquin Pipeline Expansion; the Sierra Club; Lower Hudson Group; Better Future Project; Capitalism vs. Climate; and Fossil Free Rhode Island
- Fountainhead Parks Inc.
- Peter B. Harckham
- William Huston
- Keep Yorktown Safe
- Stephen D. Kohlase
- Legacy Place Properties LLC
- Liz Laliberte
- Massachusetts Energy Facilities Siting Board
- National Amusements, Inc.
- New England Local Distribution Companies
- New Jersey Natural Gas Company
- New York State Department of Environmental Conservation
- New York State Electric Gas Corporation
- New York State Office of the Attorney General
- NJR Energy Services Company
- NSTAR Gas Company
- PSEG Energy Resources & Trade LLC
- Reynolds Hills, Inc.

- Riverkeeper, Inc.
- Douglas Taggart
- The National Grid Gas Delivery Companies
- The New England States Committee on Electricity
- Town of Cortlandt, New York
- Town of Dedham, Massachusetts
- Town of Southeast, New York
- Town of Yorktown, New York
- Una Curran
- Village of Ossining, New York
- Yankee Gas Services, Inc.

**Late, Unopposed Motions to Intervene**

- Matthew Butler
- Charles River Spring Valley Neighborhood Association
- City of Boston Delegation<sup>110</sup>
- Eastern New York Laborers' District Council
- Rickie Harvey
- Virginia Hickey
- Pramilla Malick
- Direct Abutters in West Roxbury and Other Private Citizens of West Roxbury and Dedham<sup>111</sup>
- Mary Ellen McMahon
- Medical Information Technology, Inc.
- New York State Laborers' Organizing Fund
- Jessica Porter

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<sup>110</sup> Members of the City of Boston Delegation that jointly intervened include: Congressman Stephen F. Lynch, Mayor of Boston Martin J. Walsh, Boston City Councilor Matt O'Malley, Boston City Councilor Michelle Wu, Boston City Councilor Michael Flaherty, Boston City Councilor Ayanna Pressley, Boston City Councilor Stephen J. Murphy, State Representative Edward F. Copping, and State Senator Michael Rush.

<sup>111</sup> The direct abutters and private citizens of West Roxbury that jointly intervened include: Phil Barden, Eunice Carias, Paul Dunn, Margaret P. Sheehan, Paul McInney, Maria Riviera, Jan White, Mary McMahon, Robert and Audrey Brait, Dan McCann, William and Robin Cullinane, and Linder Sweeney.



- Alexandra Schumay
- Rickie Valley

**Appendix B****Environmental Conditions for Algonquin AIM Project****Docket No. CP14-96-000**

As recommended in the final environmental impact statement (EIS) and otherwise amended herein, this authorization includes the following conditions. The section number in parentheses at the end of a condition corresponds to the section number in which the measure and related resource impact analysis appears in the final EIS.

1. Algonquin shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff data requests), and as identified in the EIS, unless modified by this Commission's Order. Algonquin must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
  - b. justify each modification relative to site-specific conditions;
  - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
  - d. receive approval in writing from the Director of the Office of Energy Projects (OEP) **before using that modification.**
2. The Director of OEP has delegated authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the Project. This authority shall allow:
  - a. the modification of conditions of this Commission's Order; and
  - b. the design and implementation of any additional measures deemed necessary (including stop-work authority) to ensure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from construction and operation of the Project.
3. **Prior to any construction**, Algonquin shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EIs' authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities for the Project.

4. The authorized facility locations shall be as shown in the final EIS, as supplemented by filed alignment sheets. **As soon as they are available and before the start of construction**, Algonquin shall file with the Secretary any revised detailed survey alignment maps/sheets for the Project at a scale not smaller than 1:6,000 with station positions for all facilities approved by this order. All requests for modifications of environmental conditions of this order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Algonquin's exercise of eminent domain authority granted under the Natural Gas Act (NGA) section 7(h) in any condemnation proceedings related to this order must be consistent with these authorized facilities and locations. Algonquin's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. Algonquin shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage and ware yards, new access roads, and other areas for the Project that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction in or near that area**.

This requirement does not apply to extra workspace allowed by Algonquin's Erosion and Sediment Control Plan (E&SCP) and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and

- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. **Within 60 days of the acceptance of the Certificate and before construction begins**, Algonquin shall file an Implementation Plan for the Project for review and written approval by the Director of OEP. Algonquin must file revisions to the plan as schedules change. The plan shall identify:
- a. how Algonquin will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EIS, and required by this order;
  - b. how Algonquin will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
  - c. the number of EIs assigned per spread, and how Algonquin will ensure that sufficient personnel are available to implement the environmental mitigation;
  - d. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
  - e. the location and dates of the environmental compliance training and instructions Algonquin will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel changes), with the opportunity for OEP staff to participate in the training session;
  - f. the company personnel (if known) and specific portion of Algonquin's organization having responsibility for compliance;
  - g. the procedures (including use of contract penalties) Algonquin will follow if noncompliance occurs; and
  - h. for each discrete facility, a Gantt chart (or similar project scheduling diagram), and dates for:
    - i. the completion of all required surveys and reports;
    - ii. the environmental compliance training of onsite personnel;
    - iii. the start of construction; and
    - iv. the start and completion of restoration.

7. Algonquin shall employ one or more EIs per construction spread. The EIs shall be:
  - a. responsible for monitoring and ensuring compliance with all mitigation measures required by this order and other grants, permits, certificates, or other authorizing documents;
  - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
  - c. empowered to order correction of acts that violate the environmental conditions of this order, and any other authorizing document;
  - d. a full-time position, separate from all other activity inspectors;
  - e. responsible for documenting compliance with the environmental conditions of this order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
  - f. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, Algonquin shall file updated status reports **on a weekly basis for the AIM Project until all construction and restoration activities are complete.** On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
  - a. an update on Algonquin's efforts to obtain the necessary federal authorizations;
  - b. the current construction status of each spread of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
  - c. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies);
  - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
  - e. the effectiveness of all corrective actions implemented;

- f. a description of any landowner/resident complaints that may relate to compliance with the requirements of this order, and the measures taken to satisfy their concerns; and
  - g. copies of any correspondence received by Algonquin from other federal, state, or local permitting agencies concerning instances of noncompliance, and Algonquin's response.
- 9. **Prior to receiving written authorization from the Director of OEP to commence construction of any Project facilities**, Algonquin shall file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
- 10. Algonquin must receive written authorization from the Director of OEP **before commencing service on each discrete facility of the Project**. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.
- 11. **Within 30 days of placing the authorized facilities for the Project into service**, Algonquin shall file an affirmative statement, certified by a senior company official:
  - a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
  - b. identifying which of the Certificate conditions Algonquin has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
- 12. **Prior to construction of the AIM Project**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a Field Sampling Plan for potential contaminated sites that could be encountered during construction. The Field Sampling Plan shall include the locations of all proposed sampling, the number of samples to be taken, how and where the samples will be analyzed, the schedule for when the sampling would occur, and the process for providing the results to the applicable agencies. (*Section 4.2.2.6*)
- 13. All subsurface materials recovered from the Hudson River horizontal directional drill (HDD) process shall be appropriately sampled for polychlorinated biphenyls

**prior to disposal of the material.** If contamination is found, it shall be handled as outlined in the Unanticipated Contamination Encounter Procedures. *(Section 4.2.2.6)*

14. **Within 30 days of placing the AIM Project facilities in service,** Algonquin shall file with the Secretary a report discussing whether any water supply well complaints concerning well yield or quality were received and how each was resolved. *(Section 4.3.1.7)*
15. **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment,** Algonquin shall file with the Secretary its final site-specific crossing plan for the Catskill Aqueduct developed in consultation with the New York City Department of Environmental Protection (NYCDEP). The Plan shall be filed as critical energy infrastructure information in accordance with NYCDEP requirements. *(Section 4.3.2.1)*
16. **In the event of an unsuccessful HDD at the Hudson or Still Rivers,** Algonquin shall file with the Secretary a plan for the crossing of the waterbody. This shall be a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction. Algonquin shall file this plan concurrent with the submission of its application to the U.S. Army Corps of Engineers and other applicable agencies for a permit to construct using this alternative crossing plan. The Director of OEP must review and approve this plan in writing before construction of the alternative crossing. *(Section 4.3.2.3)*
17. **Prior to construction of the Interstate 84/Still River HDD,** Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, a revised site-specific plan for the crossing if additional measures are needed to address any existing bridge foundations associated with the alignment across Ridgebury Road. *(Section 4.3.2.3)*
18. **Prior to construction in the vicinity of the two vernal pools in New York,** Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, revised site-specific crossing plans incorporating any additional avoidance or mitigation measures for the two vernal pools as required through the permit review process with the applicable agencies. *(Section 4.4.3.2)*
19. **Prior to construction along the take-up and relay portions of the Project,** Algonquin shall file with the Secretary a revised E&SCP, for review and written approval of the Director of OEP, adding to the responsibilities of the EI to inspect all erosion control devices and sediment barriers on a daily basis along wetlands for the take-up and relay segments, even when active construction and/or equipment operation is not occurring at a specific wetland location. *(Section 4.4.4)*

20. **Prior to construction of the Haverstraw to Stony Point Take-up and Relay segment**, Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, a site-specific plan for the Harriman State Park, including any avoidance or mitigation measures developed with the New York State Office of Parks, Recreation and Historic Preservation and Palisades Interstate Park Commission. (*Section 4.6.1.5*)
21. **Prior to construction in New York**, Algonquin shall file with the Secretary all permit requirements and avoidance or mitigation measures developed for the timber rattlesnakes in consultation with the New York State Department of Environmental Conservation (New York DEC), and documentation of its correspondence with the New York DEC regarding the proposed measures. (*Section 4.7.5.1*)
22. **Prior to construction of the AIM Project**, Algonquin shall file with the Secretary, for review and written approval of the Director of the OEP, a revised set of Residential Construction Plans that incorporate and address the comments Algonquin received from affected landowners. (*Section 4.8.3.1*)
23. **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a revised site-specific construction plan for St. Patrick's Church. The plan shall include:
  - a. a detailed schedule for construction activities within the HDD pullback area located on church property (i.e., month(s), week(s), days of the week, and hours of the day);
  - b. in addition to avoiding construction activities during weekend services, avoidance of construction activities during the morning masses held at 9:00 a.m. each Monday, Tuesday, Wednesday, and Friday;
  - c. provisions for an alternate parking area and/or shuttle service for use by parishioners during the time the church's parking areas are disrupted by construction activities; and
  - d. restoration of the church's parking areas to their preconstruction condition immediately following completion of construction activities in the HDD pullback area. (*Section 4.8.5.1*)
24. **Prior to construction of the West Roxbury Meter and Regulating (Meter) Station**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a detailed site-specific landscaping plan for mitigation of visual impacts at the station. (*Section 4.8.7.2*)



25. **Prior to construction in New York**, Algonquin shall file with the Secretary, for review and written approval of the Director of OEP, a revised Traffic Management Plan for the New York Pipeline Segments that includes the site-specific details for the crossings of Zachary Taylor Street, Gate Hill Road (Highway 210), Bleakley Avenue, Route 9A, Montrose Station Road, Maple Avenue, and Cordwood Road. (*Section 4.9.5.1*)
26. **Prior to construction of the West Roxbury Lateral**, Algonquin shall develop and file with the Secretary a detailed construction schedule for each segment of the lateral that includes the proposed construction timeframes (month, week, days), working hours, and times and dates of any restricted work hours. The detailed construction schedule shall be shared with each affected municipality. During active in-street construction of the West Roxbury Lateral, the schedule shall be updated and provided to the municipalities on a biweekly basis and included in Algonquin's construction status reports required by condition 8. (*Section 4.9.5.2*)
27. Algonquin shall not begin implementation of any treatment plans/measures (including archaeological data recovery); construction of facilities; or use of staging, storage, or temporary work areas and new or to-be-improved access roads **until**:
  - a. Algonquin files with the Secretary all remaining cultural resources survey and evaluation reports, any necessary treatment plans, and the New York, Connecticut, Rhode Island, and Massachusetts State Historic Preservation Office's comments on the reports and plans;
  - b. the Advisory Council on Historic Preservation is provided an opportunity to comment on the undertaking if historic properties would be adversely affected; and
  - c. the Commission staff reviews and the Director of OEP approves all cultural resources survey reports and plans, and notifies Algonquin in writing that treatment plans/mitigation measures may be implemented or construction may proceed.

**All material filed with the Secretary containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE." (*Section 4.10.5*)**

28. Algonquin shall file **in the weekly construction status reports** the following for the Hudson River and Interstate 84/Still River HDD sites:
- the noise measurements from the nearest noise sensitive area (NSA) for each drill entry site, obtained at the start of drilling operations;
  - the noise mitigation that Algonquin implemented at the start of drilling operations; and
  - any additional mitigation measures that Algonquin would implement if the initial noise measurements exceeded a day-night sound level ( $L_{dn}$ ) of 55 decibels on the A-weighted scale (dBA) at the nearest NSA and/or increased noise is over ambient conditions greater than 10 decibels. (*Section 4.11.2.3*)
29. Algonquin shall file a noise survey with the Secretary **no later than 60 days** after placing the authorized units at the Stony Point and Chaplin Compressor Stations in service. If a full load condition noise survey of the entire station is not possible, Algonquin shall instead file an interim survey at the maximum possible horsepower load and file the full load surveys **within 6 months**. If the noise attributable to the operation of all of the equipment at the compressor station under interim or full horsepower load conditions exceeds an  $L_{dn}$  of 55 dBA at any nearby NSAs, Algonquin shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Algonquin shall confirm compliance with the  $L_{dn}$  of 55 dBA requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.3*)
30. Algonquin shall file noise surveys with the Secretary **no later than 60 days** after placing the authorized units at the Southeast, Cromwell, and Burrillville Compressor Stations in service. If a full load condition noise survey of the entire station is not possible, Algonquin shall file an interim survey at the maximum possible horsepower load and file the full load surveys **within 6 months**. If the noise attributable to the operation of the modified compressor station at full or interim power load conditions exceeds existing noise levels at any nearby NSAs that are currently at or above an  $L_{dn}$  of 55 dBA, or exceeds 55 dBA  $L_{dn}$  at any nearby NSAs that are currently below 55 dBA  $L_{dn}$ , Algonquin shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Algonquin shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.3*)
31. Algonquin shall file noise surveys with the Secretary **no later than 60 days** after placing the Guilford, Willimantic, Oakland Heights, and West Roxbury Meter Stations and the proposed new Clapboard Ridge Road Mainline Regulator (MLR)

in service. If the noise attributable to the operation of any Meter Station or MLR at full load exceeds an  $L_{dn}$  of 55 dBA at any nearby NSA, Algonquin shall file a report on what changes are needed and shall install the additional noise controls to meet the level **within 1 year** of the in-service date. Algonquin shall confirm compliance with the above requirement by filing a second noise survey with the Secretary **no later than 60 days** after it installs the additional noise controls. (*Section 4.11.2.3*)

32. **Prior to construction of the Stony Point to Yorktown Take-up and Relay segment**, Algonquin shall file with the Secretary its final alternating current/direct current interference study associated with the West Point Transmission Project, documentation of all consultations with West Point Partners, and any additional mitigation measures to address safety-related issues. (*Section 4.12.3*)

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

Algonquin Gas Transmission, LLC )

Docket No. CP14-96-000

**REQUEST FOR REHEARING  
OF THE CITY OF BOSTON DELEGATION**

Pursuant to Section 717r(a) of Natural Gas Act<sup>1</sup> and Rule 713 of the Federal Energy Regulatory Commission (FERC or Commission) Rules of Practice and Procedure,<sup>2</sup> the City of Boston Delegation (Boston)<sup>3</sup> hereby requests rehearing and rescission on the Commission's March 3, 2015 Order (Order) issuing a certificate of public convenience and necessity and approving abandonment (Certificate) to Algonquin Gas Transmission, LLC (Algonquin) to construct and operate the proposed Algonquin Incremental Market Project (AIM Project). Boston seeks rehearing and rescission of the Commission's Order because it is contrary to the requirements of the Natural Gas Act (NGA), the Commission's own stated policy,<sup>4</sup> and the Clean Water Act (CWA).<sup>5</sup>

The Commission was required to evaluate the impacts on public safety in the City of Boston resulting from the AIM Project. It diminished and disregarded the manifest safety

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<sup>1</sup> 15 U.S.C. § 717f(c).

<sup>2</sup> 18 C.F.R. § 385.713.

<sup>3</sup> The City of Boston Delegation includes: United States Congressman Stephen F. Lynch, Mayor of The City of Boston Martin J. Walsh, Boston City Councilor Matt O'Malley, Boston City Councilor Michelle Wu, Boston City Councilor Michael Flaherty, Boston City Councilor Ayanna Pressley, Boston City Councilor Stephen J. Murphy, Massachusetts State Representative Edward F. Copping, and Massachusetts State Senator Michael Rush.

<sup>4</sup> 15 U.S.C. §§ 717 *et seq.*

<sup>5</sup> 33 U.S.C. §§ 1251 *et seq.*

impacts based on factual determinations it made that were not supported by substantial evidence. In its apparent rush to issue the Certificate, it violated the CWA, which required it to wait until Massachusetts, Connecticut and New York exercise their regulatory authority and jurisdiction to certify that the AIM Project will not violate the water quality standards of each State.

## 1. STATEMENT OF RELEVANT FACTS

On February 28, 2014, Algonquin<sup>6</sup> filed an application pursuant to Section 7(c) of the NGA and Part 157 of the Commission's regulations<sup>7</sup> for authorization to construct and operate its AIM Project in New York, Connecticut, Rhode Island, and Massachusetts. Prior to that, at various times between 2010 and 2013, Algonquin held open seasons for the AIM Project to solicit bids for additional service and for the release of existing firm transportation entitlements. As a result of the open seasons, Algonquin executed precedent agreements with eight local distribution companies and two municipal utilities (collectively, the Project Shippers).<sup>8</sup>

Algonquin states that the AIM Project will enable it to provide 342,000 dekatherms (Dth) per day of firm transportation service from its existing recipient points in Ramapo, New York, to various city gate delivery points in Connecticut, Rhode Island, and Massachusetts.<sup>9</sup>

Algonquin proposes to construct, install, and operate, approximately 37.4 miles of pipeline and related facilities in New York, Connecticut, and Massachusetts.<sup>10</sup> Among other

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<sup>6</sup> Algonquin is a Delaware limited liability company and an indirect, wholly-owned subsidiary of Spectra Energy Partners, LP. *Order*, p. 1.

<sup>7</sup> 18 C.F.R. Pt. 157.

<sup>8</sup> The Project Shippers are Bay State Gas Company; Boston Gas Company; Colonial Gas Company; Connecticut Natural Gas Corporation; Middleborough Gas and Electric; The Narragansett Electric Company; Norwich Public Utilities; NSTAR Gas Company; The Southern Connecticut Gas Company, and Yankee Gas Services Company.

<sup>9</sup> *Order*, p.1.

<sup>10</sup> *Id.*, p. 2

things, Algonquin proposes to install approximately 4.1 miles of 16-inch-diameter high pressure pipeline and approximately 0.8 miles of 24-inch-diameter high pressure pipeline off its existing I-4 System Lateral in Norfolk and Suffolk Counties, Massachusetts (West Roxbury Lateral or WRL).<sup>11</sup> Algonquin also proposes to construct a new meter station at milepost (MP) 4.2 of the proposed WRL within the City of Boston, to deliver natural gas to Boston Gas Company in Suffolk County, Massachusetts (West Roxbury Meter Station).<sup>12</sup>

These aspects of the AIM Project, which are to be located in the City of Boston, are noteworthy and materially distinct from the rest of the project. While much of the AIM Project will involve replacing existing pipelines, looping of existing pipelines, and modifying existing meter stations, the WRL and West Roxbury Meter Station components of the project contemplate *new* installations and construction.<sup>13</sup> And while much of the AIM Project will be in non-residential areas, the WRL will not. Indeed, the majority of the residences that are in the path of the AIM Project route are on the WRL.<sup>14</sup> Similarly, the West Roxbury Meter Station “would be bounded by residential properties to the north, south and west and there is a residence immediately adjacent to the proposed facility. . . .”<sup>15</sup> The WRL “would primarily be placed within streets in the vicinity of residential and commercial areas” and all of it, including the

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<sup>11</sup> *Id.*

<sup>12</sup> *Id.* p. 4.

<sup>13</sup> *Id.*, pp. 2-4.

<sup>14</sup> *Id.*, p. 27.

<sup>15</sup> *Final Environmental Impact Statement (FEIS)* (elibrary.ferc.gov/idmws/file\_list.asp?document\_id=14293917 accession 20150123-4001), 4-174. All subsequent citations to papers in the elibrary docket for docket no. CP14-96-000 appear herein as “Accession\_\_\_\_\_.”

location of the West Roxbury Meter Station, would have an explosion impact radius of over three hundred feet.<sup>16</sup>

Consequently, all of the WRL, including all of that portion of the WRL high pressure gas pipeline planned for the City of Boston, as well as the West Roxbury Meter Station, will be located in “high consequence areas (HCA),”<sup>17</sup> which are areas “where a gas pipeline accident could do considerable harm to people and their property”<sup>18</sup>

As the Commission knows, gas pipeline accidents do happen. During the 20 year period from 1994 through 2013, at least 1,237 “significant incidents” involving gas leaks causing death, personal injury requiring hospitalization, or property damage of more than \$115,000 (in 2014 dollars) were reported around the country.<sup>19</sup> Outside forces including natural forces and earth movement accounted for 34.5% of these significant gas leak incidents. Pipeline material, weld or equipment failure were responsible for an additional 24.5%.<sup>20</sup>

Complicating the safety issues raised by the AIM Project to be installed in West Roxbury is the fact, that the proposed route of the WRL and the West Roxbury Meter Station abuts the West Roxbury Crushed Stone Quarry (“Quarry”), which employs blasting operations.<sup>21</sup>

One year ago, notice of Algonquin’s application was published in the *Federal Register* (79 Fed. Reg. 15,987). Numerous timely and late motions to intervene were filed. The Commission granted Boston’s late motion to intervene.<sup>22</sup>

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<sup>16</sup> *FEIS*, 4-275 and 4-279 to 4-280.

<sup>17</sup> *Id.*, 4-266 to 4-268.

<sup>18</sup> *Id.*, 4-267.

<sup>19</sup> *Id.*, 2-272.

<sup>20</sup> *Id.*

<sup>21</sup> *Order*, p. 22.

<sup>22</sup> *Id.*, p. 53, 55.

The Commission received numerous comments and protests filed by individuals and entities.<sup>23</sup> Hundreds of comments and protests raised various concerns over the impact of the AIM Project on the communities through which it would travel.<sup>24</sup> Many of these “questioned the safety of the proposed project.”<sup>25</sup>

Prior to the issuance of the Order and Certificate, Boston repeatedly wrote to the Commission to raise the alarm about the locations of the WRL and West Roxbury Meter Station.<sup>26</sup> These written communications consistently and vehemently opposed the proposed route of the WRL and the proposed location of the West Roxbury Meter Station.<sup>27</sup> And this opposition was focused exclusively on the issue of public safety.<sup>28</sup> In response, the Commission assured Boston that its decisions about the AIM Project would be based on a careful review of the safety issues relating to the project.<sup>29</sup>

On January 23, 2015, the Commission issued its Final Environmental Impact Statement (FEIS) on the AIM Project.<sup>30</sup>

Since the proposed facilities would be used to transport natural gas in interstate commerce and the facilities to be abandoned have been used to transport natural gas in interstate commerce subject to the jurisdiction of the Commission, the proposed abandonment, construction, and operation of the facilities are subject to subsections (b), (c), and (e) of section 7

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<sup>23</sup> *Id.*, p. 6.

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*, 36.

<sup>26</sup> Accession 20140924-5070; Accession 20141007-0068; Accession 20141017-0039; Accession 20141107-0006; Accession 20141121-0011; Accession 2015023-0051.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> Accession 20141205-0018

<sup>30</sup> Accession 20150123-4001



of the NGA,<sup>31</sup> which frame the Commission's obligations in its regulatory review of Algonquin's application of the AIM Project.

In its Order, the Commission reasonably concluded that the AIM Project will enable Algonquin to provide 342,000 Dth per day of firm service to the Project Shippers' delivery points to accommodate increasing demand in the New England region.<sup>32</sup> However, the Commission also concluded, without adequate evidentiary support, that Algonquin had taken steps to minimize any adverse impacts on landowners and surrounding communities.<sup>33</sup> In its short discussion titled "Safety" in the Order, the Commission deflected the concerns over safety by stating that the project's facilities will be designed, constructed, operated and maintained to meet or exceed the U.S. Department of Transportation's Minimum Federal Safety Standards and that the "majority of the project will replace existing, aged pipeline with new pipeline in the same locations and will not increase the risk to the nearby public."<sup>34</sup> The Commission's second point has no application to the new WRL and new West Roxbury Meter Station.<sup>35</sup> The public in the West Roxbury community will face an increased risk.<sup>36</sup> In the very limited fashion in which the Commission considered that increased risk, it brushed it aside based on deeply flawed fact finding that was arbitrary, capricious and unsupported by substantial evidence.

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<sup>31</sup> *Order*, p. 7: 15 U.S.C. § 717f(b), (c) and (e).

<sup>32</sup> *Id.*, p. 8.

<sup>33</sup> *Id.*, p. 9.

<sup>34</sup> *Id.*, p. 36.

<sup>35</sup> *Id.*, pp. 2-4.

<sup>36</sup> *FEIS*, 4-266 to 4-268, 4-275 and 4-279 to 4-280.

## 2. ISSUES PRESENTED

**Issue 1:** Under federal law, the Commission's own stated policy, and its promise to Boston, the Commission was required to make its determinations concerning the alternatives to the proposed WRL route and location of the West Roxbury Meter Station based on substantial evidence. Here, the findings concerning those alternatives were arbitrary and capricious and without the support of substantial evidence. Did the Commission violate the Natural Gas Act, 15 U.S.C. § 717 *et seq.*?

**Issue 2:** Under Section 401 of the Clean Water Act, 33 U.S.C. §§ 1341(a)(1), the Commission lacks the legal authority to issue a certificate for a gas pipeline project until each affected State certifies that the project would not violate that State's water quality standards. Here, the Commission issued the Certificate for the AIM Project before Massachusetts, Connecticut and New York had each certified that the AIM Project will not violate its respective water quality standards. Did the Commission violate Section 401 of the Clean Water Act?

## 3. ARGUMENT

**A. The Commission erred and violated the Natural Gas Act by making arbitrary, capacious and factually unsupported findings underpinning its rejection of the alternatives to Algonquin's proposed route for the WRL and location of the West Roxbury Meter Station.**

**(1) The Commission promised Boston that it would meet its obligation to exercise its regulatory decision making concerning the AIM Project based on a careful review of the safety issues.**

When reviewing an application for the construction and operation of a natural gas pipeline, the Commission has a fundamental duty and obligation: to determine whether the proposed project qualifies for a certificate of public convenience and necessity under Section

7(c) of the NGA, 15 U.S.C. § 717f(c). Such a determination must be made upon substantial evidence and not in an arbitrary or capricious manner.<sup>37</sup>

The AIM Project includes the installation of a *new* gas pipeline through the densely populated neighborhood of West Roxbury in the City of Boston and the construction of a *new* meter station in that same neighborhood and across the street from a Quarry where blasting operations take place.<sup>38</sup>

The public in the West Roxbury Community will face an increased risk.<sup>39</sup> One might reasonably anticipate that the elected representatives of Boston would be extremely concerned about the potential hazards and safety issues implicated by such a plan. And, indeed, they were. Boston repeatedly voiced its public safety concerns to the Commission.<sup>40</sup> For example, in his September 26, 2014 letter to the Commission, Mayor Walsh stated:

I share the concerns of the community and of other public officials about the impact that the proposed compressor pump station will have on the area. This station would be sited near an active quarry in West Roxbury. The dangers of natural gas are amplified by the proximity to a quarry where blasting occurs. The quarry abuts a densely populated area which in addition to residential neighborhoods includes the Deutsches Altenheim assisted care and nursing facility and Roxbury Latin School.<sup>41</sup>

On October 24, 2014, Mayor Walsh again raised concerns and objections over the siting of WRL and new West Roxbury Meter Station:

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<sup>37</sup> *Missouri Public Service Commission v. FERC*, 215 F.3d 1,7 (D.C. Cir. 2000) (Natural Gas Act has a “requirement of substantial evidence for facts found by the Commission”); *Louisiana Ass’n of Independent Producers and Royalty Owners, v. FERC*, 958 F.2d 1101, 1115 (D.C. Cir. 1992) (same); 5 U.S.C. § 706(2)(A), (E), and (F).

<sup>38</sup> *Order*, pp. 2-4, 22, 27.

<sup>39</sup> *FEIS*, 4-266 to 4-268, 4-275, and 4-279 to 4-280.

<sup>40</sup> Accession 20140924-5070; Accession 20141007-0068; Accession 20141017-0039; Accession 20141107-0006; Accession 20141121-0011; Accession 2015023-0051.

<sup>41</sup> Accession 20141007-0068.

At a recent community meeting I held in West Roxbury sponsored by the local representatives and attended by United States Congressman Stephen F. Lynch, many issues were brought to our attention that warrant consideration as the process moves forward. Of particular concern is the danger that the proposed route of the high pressure gas pipeline presents to the densely settled residential homes in the area. Of further concern is the decision to locate the Metering and Regulating station in an area of residential homes and adjacent to an active stone quarry that engages in significant ongoing blasting activity.

As proposed, the current route which runs along Grove Street to the M&R Station at Grove and Centre Streets across the quarry is troubling. According to many of the longtime residents of the homes in the area, they regularly experience shaking and rattling with each blast from the quarry, raising legitimate worry that this is not an optimal or safe location for a high pressure gas line. While I understand the need to supply natural gas to this area, I agree with my neighbors and must oppose the current configuration based on the quality of life and public safety concerns generated by the current iteration of this project.<sup>42</sup>

In its December 2, 2014 response,<sup>43</sup> the Commission advised Boston that its “staff is preparing the final EIS, which will address all the comments received during the draft EIS comment period, including those regarding alternative [routes and locations for the proposed WRL and metering station], safety, and the quarry’s blasting operations.” Moreover, the Commission promised Boston that its “decision on whether to authorize this project will be based on *a careful review of the safety*, security and environmental issues relating to this project and will be rooted in the law, facts and science.”<sup>44</sup>

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<sup>42</sup> Accession 20141107-0006.

<sup>43</sup> Accession 20141205-0018.

<sup>44</sup> *Id.* (emphasis added).

**(2) When deciding whether a gas pipeline project is required by the public convenience, the Commission's stated policy is to consider the effects of the project on all affected interests, including the safety of the surrounding communities.**

The Commission's express commitment to Boston to base its decision on a careful review of the safety issues was firmly rooted in the Commission's own articulation of its regulatory obligations under Section 7(c) of the NGA, 15 U.S.C. § 717f(c). In the Order, the Commission specifically invoked its Certificate Policy Statement.<sup>45</sup> Its stated policy is that in "deciding whether a proposal is *required* by the public convenience, the commission will consider the effects of the project on *all* affected interests . . . ."<sup>46</sup> The Commission has long recognized that the "major interests that may be adversely affected" include "the interests of landowners and surrounding communities."<sup>47</sup> As they are here, those "interests may be represented by state or local agencies."<sup>48</sup>

And the pertinent interests of surrounding communities that the Commission is required, and has promised, to consider and take into account are not limited to the environmental impacts of a project.<sup>49</sup> Indeed, they include all potential adverse impacts, including noise, and even "esthetic concerns."<sup>50</sup> Plainly, safety is something that must be taken into account. That is no doubt the reason that the Commission promised Boston that its exercise of its regulatory decision

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<sup>45</sup> *Order*, p. 7.

<sup>46</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999), *order on clarification*, 90 FERC ¶ 61,128, *order on clarification*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement), p. 23 (emphasis added).

<sup>47</sup> *Id.*

<sup>48</sup> *Id.*, p. 24

<sup>49</sup> *Id.*, pp. 24 and 27.

<sup>50</sup> *Id.*

making authority would be “based on a careful review” of the safety issues inherent in the AIM Project.<sup>51</sup>

Here, the Commission broke that promise and violated its own policy, which instructs:

The more interests adversely affected or the more adverse impact a project would have on a particular interest, the greater the showing of public benefits from the project required to balance the adverse impact. The objective is for the applicant to develop whatever records is necessary, and for the Commission to impose whatever conditions are necessary, for the Commission to be able to find that the benefits to the public from the project outweigh the adverse impact on the relevant interests.<sup>52</sup>

As detailed below, the Commission failed to impose the conditions necessary so that the benefits to the public outweighed the adverse impact on the surrounding community of West Roxbury.

**(3) Algonquin could not, or refused to, answer the West Roxbury community’s legitimate questions about the safety of the project.**

The ill-conceived plan to route the WRL within feet of, and to construct the West Roxbury Meter Station across the street from, the active Quarry is fraught with serious public safety ramifications. Neither Algonquin nor the Commission has been able to defend this plan with anything other than evasion and unsupportable factual assertions and conclusions. Evidence of this is abundant.

One need not look further than Algonquin’s answers to the safety questions posed by the West Roxbury Saves Energy group (WSRE), which were comically non-responsive.<sup>53</sup> Here is an example (WSRE’s Questions 1 and 2 in bold; Algonquin’s so-called answer in italics):

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<sup>51</sup> Accession 20141205-0018.

<sup>52</sup> *Certificate Policy Statement*, p. 26.

<sup>53</sup> Accession 20141124-5114.

**1. If an explosion happened along any point in the five-mile pipeline, what would the blast radius be? How many residents and homes would be affected by the blast and the ensuing fires?**

**2. If an explosion happened at the M&R Station, what would the blast radius be? How many residents and homes would be affected by the blast and the ensuing fires?**

*Safety is Algonquin's top priority in the construction, operation and maintenance of its facilities. According to National Transportation Safety Board statistics, the interstate natural gas pipeline system is the safest energy delivery system in the nation. The pipeline and the meter and regulator station are designed, constructed and operated to meet or exceed the safety requirements exclusively governed by the U.S. Department of Transportation ("U.S. DOT").*

*It is important to note that in the Draft Environmental Impact Statement issued on August 6<sup>th</sup>, the FERC concluded that Algonquin's implementation of the safety measures which are reflected in its filing would ensure public safety and the integrity of its proposed facilities.*

*The U.S. DOT is responsible for establishing the requirements and oversight of the operation and maintenance of interstate natural gas pipelines. In that capacity, regional U.S. DOT representatives perform periodic inspections of Algonquin as the pipeline operator by reviewing its records, operating and maintenance procedures and facilities to ensure that Algonquin's operating practices meet or exceed U.S. DOT regulations.*

*A pipeline rupture or similar occurrence at the meter and regulator station is highly unlikely. In fact, the U.S. DOT design and operating criteria are developed specifically to avoid those types of events. Algonquin and the pipeline industry in general make every effort to avoid and prevent such occurrences. Algonquin works with local authorities and the Dig Safe Program to educate third parties about the necessary communications when a contractor needs to perform construction on and around the pipeline right-of-way or in the general vicinity of the meter and regulator station. Additional detail concerning the strong focus which Algonquin brings to the construction, operation and maintenance of its facilities was included within Resource Report 11 as filed with Algonquin's application at the FERC; a copy of*

*Resource Report 11 is included as an attachment to these responses.*

*Algonquin has safely operated pipelines in Massachusetts and the region for over sixty years. The safe operation of the Algonquin pipeline system is due to procedures and specifications that incorporate multiple layers of safety into the design, materials procurement, construction and operation as described more fully in the General Pipeline Safety Information section included with these responses.<sup>54</sup>*

In five paragraphs of self-congratulatory evasiveness, Algonquin never answers WRSE's questions about the blast radius of an explosion on the WRL or at the West Roxbury Meter Station. Algonquin surely knows that the blast radius is over three hundred feet.<sup>55</sup> The fact that Algonquin refused to answer candidly these questions bespeaks an unacceptable disregard for the safety concerns of the surrounding community.

As detailed below, the Commission too failed to address the safety concerns based on the actual facts presented to it.

**(4) The Commission's misplaced reliance on the GZA Report was arbitrary and capricious and unsupported by substantial evidence.**

One might reasonably question the wisdom of locating a new high pressure gas pipeline and meter station next to a Quarry that uses explosions to crack bedrock. To address that issue, Algonquin and the Commission rely exclusively on the report of GZA GeoEnvironmental, Inc. ("GZA").<sup>56</sup> In the FEIS, the Commission inaccurately states that GZA "concluded. . . that ground vibrations from blasting at the quarry would not be disruptive or damaging to the M&R

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<sup>54</sup> *Id.*

<sup>55</sup> *FEIS*, 4-279 to 4-280.

<sup>56</sup> *Id.*, 4-5 to 4-6; *Order*, P. 22.



Station” and “would not damage the proposed pipeline.”<sup>57</sup> That erroneous finding appears in the Order as well.<sup>58</sup>

In fact, GZA’s conclusions were far more tentative. GZA concluded only that:

Ground vibrations from future blasting at the Quarry are therefore *not anticipated* to be disruptive or damaging to the proposed pipeline and M&R station.

\* \* \*

Based on our evaluation, the nearby Quarry blasting is *not anticipated* to have a significant negative impact on the operation of the proposed West Roxbury Lateral metering and regulating (M&R) station and pipeline.<sup>59</sup>

This expert opinion falls well short of supporting the Commission’s finding that the Quarry operations will not damage the West Roxbury Meter Station or adjacent pipeline. GZA, Algonquin’s hired expert witness, was not prepared to assert that and did not assert that. To say merely that a bad outcome is “not anticipated” is a meaningless opinion. No doubt most, or all, of the 1,237 “significant [gas pipeline] incidents” between 1994 and 2003 involving death, serious personal injury or substantial property damages<sup>60</sup> were “not anticipated.”

In addition, the GZA analysis suffers from a significant defect. While much of the report is devoted to irrelevant issues, *e.g.*, flying rocks, GZA performed no analysis of the cumulative effect of blasting operations on the pipeline or Meter Station. Perhaps one blast might not cause the pipeline to rupture or experience a weld failure. But what is the cumulative effect of dozens or hundreds of blasts over a period of years? GZA did not answer that question. Perhaps that is

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<sup>57</sup> *FEIS* 4-5 to 4-6.

<sup>58</sup> *Order*, p. 22 ( the “final EIS finds that blasting at the quarry will not damage the proposed pipeline”).

<sup>59</sup> *GZA Report* (Accession 20140331-5443), p. 4 (emphasis added).

<sup>60</sup> *FEIS*, 2-272.

why it did not opine that the blasting operations would not damage the pipeline or West Roxbury Meter Station.

In its discussion in the FEIS concerning the GZA Report and GZA's analysis, the Commission states:

In addition, it should be noted that existing pipelines currently operate in Grove Street between the quarry and the proposed AIM Project facilities. The existing pipelines consist of two water pipelines and a natural gas distribution pipeline. The closest of these three existing utilities to the quarry is a 12-inch-diameter water pipeline, which ranges in distance between approximately 10 and 20 feet from the quarry property line. We have found no evidence that these existing pipelines have been impacted by blasting at the quarry.<sup>61</sup>

These assertions reemerge in the Order, also wedged into a discussion of GZA's opinions:

Therefore, the final EIS finds that blasting at the quarry will not damage the proposed pipeline. The final EIS's conclusion is corroborated by its finding that there is no evidence the two water pipelines and one natural gas distribution pipeline that operate along Grove Street between the quarry and the proposed project have been impacted by blasting at the quarry.<sup>62</sup>

Here again, the Commission has made findings unsupported by the evidence. To be sure, the GZA Report does state that there are "multiple existing utilities beneath Grove Street, including a water main line and a sanitary sewer line both of which are closer to the Quarry property line than the proposed gas pipeline in this area."<sup>63</sup> However, the report makes no specific mention of an existing gas line. And while the report discusses at some length the proximity of the water line to the Quarry, it never reports any facts or offers any opinions as to

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<sup>61</sup> *FEIS*, 4-6.

<sup>62</sup> *Order*, p.22

<sup>63</sup> *GZA Report* (Accession 20140331-5443), p. 12.

the effect of the blasting at the Quarry on the condition of that water line.<sup>64</sup> Similarly, it has nothing to say about the effect upon the condition of the existing gas line.<sup>65</sup> Ultimately, GZA concedes that the “age, *condition*, depth, and material of the existing utilities are not known.”<sup>66</sup>

**(5) The Commission rejected the alternative for the West Roxbury Meter Station in an arbitrary and capricious manner and without the support of substantial evidence.**

The Commission received numerous requests that it evaluate an alternative site for the West Roxbury Meter Station, which alternative was located on “residential land at the intersection of Centre and Alaric Street.”<sup>67</sup> The entirety of the Commission’s evaluation of that site is as follows:

The alternative site is located on residential land at the intersection of Centre Street and Alaric Street. Use of the site would require the purchase and demolition of an existing residence to provide sufficient space for the M&R facility. Construction at this site would also result in significant traffic impacts along Centre and Alaric Streets due to the limited space available for construction.<sup>68</sup>

For these “reasons” and its misplaced reliance on the GZA Report, *see Argument* Section 3A(4) *supra*, the Commission found that the alternative site was not “technically feasible or environmental [sic] preferable to the proposed site.”<sup>69</sup>

There was no basis for the Commission’s finding that the alternative site was not “technically feasible.” The fact that Algonquin would have to purchase an “existing residence” and demolish it, does not render the site “technically” unfeasible. Algonquin has the financial

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<sup>64</sup> *Id.*, pp. 12, 17-18.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.*, p. 12 (emphasis added).

<sup>67</sup> *FEIS*, 3-55.

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

resource to buy a house. If it does not, it should not (and would not) be authorized to complete a project with a price tag approaching one billion dollars.<sup>70</sup> If it lacks the “technical” skill to knock down a single residence, it should not (and would not) be trusted with a massive, multistate construction project.<sup>71</sup>

Similarly, the notion that the alternative site is not “technically feasible or environmental[ly] preferable” because of potential traffic impact is wholly unsupportable. The WRL will be constructed under streets in the City of Boston, and this “[i]n-street construction will affect traffic in the project area along” the WRL.<sup>72</sup> Moreover, the Commission found that two intersections on the proposed WRL route “could experience significant adverse traffic impacts as a result of [its] construction.”<sup>73</sup> By “could” the Commission actually means “will.” It concedes that “lengthy delays *will* occur on the northbound Centre Street [West Roxbury] approach to the intersection” of Centre and Spring Streets and that there “*will* be temporary, but significant” traffic impacts at that intersection.<sup>74</sup>

These traffic impacts on Centre Street were deemed acceptable to the Commission, because Algonquin will use police details and adjustments to its construction schedule to mitigate the lengthy delays.<sup>75</sup> Surely, Algonquin could use these same techniques to mitigate traffic impacts at other locations such as the alternative location for the West Roxbury Meter Station. Plainly, traffic issues resulting from construction of a meter station at Centre and Alaric

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<sup>70</sup> *Order*, p. 4.

<sup>71</sup> *Id.*, pp. 2-4.

<sup>72</sup> *Id.*, p. 32.

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* at 33 (emphasis added).

<sup>75</sup> *Id.*

Streets was an insufficient basis to find that alternative location not “technically feasible on environmental[ly] preferable.”

The analysis of the alternative site for the West Roxbury Meter Station is so thin and its findings so unsupported by the record that the Commission chose not to mention it in its Order. Its flawed analysis and erroneous findings, set forth in the FEIS, are arbitrary, capricious and unsupported by substantial evidence.<sup>76</sup> Accordingly, the Commission should rescind the Order.

**(6) The Commission rejected the alternative route for the WLR in an arbitrary and capricious manner and without the support of substantial evidence.**

In a manner similar to its flawed analysis of the alternative for the West Roxbury Meter Station, the Commission erred in its determination concerning the WLR alternative route through the City of Boston.<sup>77</sup>

The Commission was presented with two alternative routes for the WLR. One in the Towns of Westwood and Dedham;<sup>78</sup> and one originating in Dedham and extending into and terminating in the City of Boston.<sup>79</sup> This Request For Rehearing is focused on the latter.

In its Order, the Commission says simply that “[f]or various reasons discussed in detail in section 3.5 of the final EIS, these alternatives were not selected over the proposed route.”<sup>80</sup> The FEIS includes Table 3.5.1-2 (set forth below), which compares the WRL route alternative for the

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<sup>76</sup> *Missouri Public Service Commission*, 215 F. 3d at 7; *Louisiana Ass’n of Independent Producers and Royalty Owners*, 958 F.2d at 1115; 5 U.S.C. § 706(2)(A), (E), and (F).

<sup>77</sup> *Order*, p.45, *FEIS*, 3-25 to 3-26.

<sup>78</sup> *FEIS*, 3-27 to 3-29.

<sup>79</sup> *Id.*, 3-25 to 3-26.

<sup>80</sup> *Order*, p. 45, *citing FEIS*, 3-20 to 3-52.

City of Boston with the proposed route:

TABLE 3.5.1-2 <sup>81</sup>			
<b>Comparison of the West Roxbury Lateral Alternative Route to the Correspondence Segment of the Proposed Route for the AIM Project</b>			
Environmental/Engineering Factor	Unit	Proposed Route	Alternative Route
Length (MPs 3.0 to 5.0)	miles	2.0	2.1
Construction within roadway	miles	1.8	1.3
Number of residences within 50 feet	number	161	83
Number of residences within 100 feet	number	185	132
Wetland crossings	feet	0	0
Waterbody crossings	number	1	1
Road crossings	number	24	19
<hr/> a Includes residential housing complexes. Each contiguous building was counted as a single residence.			

As shown in its table and acknowledged by the Commission, the alternative route would require 0.5 mile less construction within roadways and cross five fewer roads.<sup>82</sup> Both routes would avoid wetlands and cross the same number of waterbodies.<sup>83</sup> Most significantly, the alternative route would pass within 50 and 100 feet of far fewer residences than Algonquin's proposed route.<sup>84</sup> Yet, the Commission inexplicably determined that the "West Roxbury Lateral

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<sup>81</sup> *FEIS*, 3-25.

<sup>82</sup> *Id.*, 3-25.

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

Alternative Route would not be preferable to or provide a significant environmental advantage over the proposed route.”<sup>85</sup>

The Commission’s principal justification for that determination is its finding that “the proposed route would avoid the residential area along Belle Avenue and result in fewer impacts on homes and neighborhoods,” and that “more of the alternative route would pass through residential neighborhoods.”<sup>86</sup> These findings do not survive scrutiny.

Figure 3.5.1-2 of the FEIS is a map comparing the proposed and alternative routes.<sup>87</sup> It shows that the factual assertion that “more of the alternative route would pass through residential neighborhoods,”<sup>88</sup> is indisputably erroneous. Nearly the entirety of the proposed route passes through residential neighborhoods.<sup>89</sup> By comparison, a substantial portion of the alternative route travels through commercial and industrial areas, particularly that portion that starts at MP 3.0.<sup>90</sup>

The facile argument that the “proposed route would avoid the residential area along Belle Avenue,”<sup>91</sup> is the thinnest of reeds upon which the Commission rests its determination. While it is no doubt true, it ignores the fact that the alternative route would avoid the residential areas on Centre Street and elsewhere. And nowhere mentioned in its analysis of the alternative versus proposed routes is the unquestionable fact that the alternative route would avoid the Quarry, which is, and has been, Boston’s primary safety concern and objection.

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<sup>85</sup> *Id.*

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*, 3-26.

<sup>88</sup> *Id.*, 3-25 to 3-26.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*, 3-25

In further support of its conclusion, the Commission asserts that “the proposed route ... primarily would be constructed along and within more established roadways (e.g., Washington, Grove, and Centre Streets) and in parking lots of commercial and industrial properties.”<sup>92</sup> Here again, the Commission’s map, Figure 3.5.1-2, belies this assertion. It clearly shows that far more of the alternative route is in parking lots of commercial and industrial properties than is the case with the proposed route.<sup>93</sup> Similarly, the suggestion that the proposed route is more along and within “more established roadways” is plainly wrong. While Belle Avenue is less “established” than Washington Street, the substantial majority of the alternative route is along and in the established roadways of Spring Street, Baker Street, and the VFW Parkway (also known as State Route 1).<sup>94</sup>

Lastly, the Commission also seeks to support its decision, by noting that “[d]uring the initial stakeholder outreach, public officials representing the City of Boston expressed concern to Algonquin regarding the alternative route because of its proximity to residential neighborhoods.”<sup>95</sup> Here again, the notion that the alternative route has a greater proximity to residential neighborhoods is a canard. Moreover, if the Commission was moved by the concerns of elected officials representing the City of Boston, it would have heeded their repeated written exhortations to avoid the Quarry.<sup>96</sup> Boston did not receive deference to its safety concerns. It also did not receive the benefit of fact finding by the Commission that was supported by substantial evidence. On the contrary, the findings of the Commission concerning the WRL

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<sup>92</sup> *Id.*

<sup>93</sup> *Id.*, 3-26

<sup>94</sup> *Id.*, 3-25 to 3-26.

<sup>95</sup> *Id.*, 3-25.

<sup>96</sup> Accession 20140924-5070; Accession 20141007-0068; Accession 20141017-0039; Accession 20141107-0006; Accession 20141121-0011; Accession 2015023-0051.



alternative route were arbitrary and capricious. On review, the Commission relies on no actual facts to support its determination that the alternative route “would not be preferable” to Algonquin’s proposed route.

Contrary to its promise to Boston, that determination was not “based on a careful review of the safety” issues and was not “rooted in the law, facts and science.” Now, the Commission can keep its promise to Boston and meet its obligations under the NGA only by rescinding the Order.<sup>97</sup>

**B. The Commission violated the Clean Water Act by issuing the Certificate before Massachusetts, Connecticut and New York certified that the AIM Project would not violate those states’ water quality standards.**

**(1) The Commission violated clear and unambiguous federal law set forth in Clean Water Act.**

The Commission acted in direct contravention with federal law when it issued the Certificate before the Massachusetts Department of Environmental Protection (MADEP), the Connecticut Department of Energy and Environmental Protection (CTDEEP), and the New York State Department of Environmental Conservation (NYSDEC) had certified that the project would not violate each State’s respective water quality standards. Pursuant to the CWA, the Commission may not authorize a project prior to the issuance of a State Water Quality Certification (WQC). Section 401 of the CWA plainly directs that “no [federal] license or permit shall be granted until the certification required by this section has been granted or waived.”<sup>98</sup>

The statute’s language is clear and unambiguous, and gives each State the authority to block or

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<sup>97</sup> *Missouri Public Service Commission*, 215 F. 3d at 7; *Louisiana Ass’n of Independent Producers and Royalty Owners*, 958 F.2d at 1115; 5 U.S.C. § 706(2)(A), (E), and (F).

<sup>98</sup> 33 U.S.C. § 1341(a)(1); *see also PUD No. 1 of Jefferson Cnty v. Wash. Dept. of Ecology*, 511 U.S. 700, 707, 114 S. Ct. 1900, 1907 (1994) (noting that Section 401 “requires States to provide a water quality certification before a federal license or permit can be issued for activities that may result in any discharge into intrastate navigable waters”).

condition federal projects that it determines will violate State water quality standards.<sup>99</sup> The States' role is particularly important in the AIM Project, which affects 102 surface waterbodies, 52.5 acres of wetland and 1948 square feet of vernal pool habitat.<sup>100</sup>

While the Commission has authority to impose conditions on its certificates, that power does not extend to overriding an explicit statutory mandate. The statuses of Algonquin's applications for water quality certification in Massachusetts, Connecticut and New York remain open, awaiting State action.<sup>101</sup> The Commission therefore indisputably violated Section 401 of the CWA, despite its own knowledge of the requirement and comments raising that requirement filed during the public comment period.<sup>102</sup> One public comment stated:

A comprehensive and proper Water Quality Certificate is necessary to provide NYSDEC and USEPA [the United States Environmental Protection Agency] with the necessary regulatory and enforcement tools to avoid environment impacts witnessed in construction and maintenance of other pipelines in the past ... The law prohibits [the Commission] from issuing the certificate approval for [Algonquin's] pipelines until the [CWA] requirements are met.<sup>103</sup>

The Commission responded:

As demonstrated in the EIS, it is impractical, and sometimes impossible, to complete studies and develop plans to mitigate potential adverse aspects of a project in advance of issuing a final order. This can be because many post-authorization conditions require site-specific plans and surveys that cannot be completed until the applicant is able to employ eminent domain to gain access to previously inaccessible land parcels ... We stress that this order's authorization is subject to Algonquin's compliance with numerous

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<sup>99</sup> See *State of N.C. v. FERC*, 112 F.3d 1175, 1183 (D.C. Cir. 1997), *cert. denied*, 522 U.S. 1108, 118 S. Ct. 1037 (1998) (concluding that "congressional intent underlying Section 401(a)(1) of CWA is clear and unambiguous"); *City of Tacoma v. FERC*, 460 F.3d 53, 67 (D.C. Cir. 2006).

<sup>100</sup> *Order*, p. 24-25.

<sup>101</sup> See *FEIS*, 1-8, 1-10, 1-11 for the respective statuses of Algonquin's applications to New York, Connecticut and Massachusetts.

<sup>102</sup> 149 FERC ¶ 61,199 (2014); *Letter from John Louis Parker, Esq.* (Accession 20150123-5286).

<sup>103</sup> *Letter from John Louis Parker, Esq.* (Accession 20150123-5286), p. 3

specific conditions. Consequently, we find no need to delay issuing our decision, given that our authorizations are conditioned to preclude the applicants from commencing construction until all necessary permits and approvals under federal law are granted, including water quality certificates under the [CWA].<sup>104</sup>

The fact that the Commission conditioned the authorization of the Certificate on future receipt of the required WQCs does not cure the Commission's violation of the CWA.<sup>105</sup> The unequivocal language of the CWA prohibits the granting of *any* license or permit prior to the issuance of a State WQC.<sup>106</sup> The statute makes no exceptions for licenses or permits that are conditioned on the subsequent grant of a WQC. Moreover, it is entirely unreasonable to allow some activities authorized under the Certificate to proceed, including an eminent domain proceeding, when the AIM Project could be prohibited from moving forward if Massachusetts, New York, or Connecticut refuse to issue the WQC.

**(2) The Commission's issuance of the Certificate is incompatible with Congressional intent and design.**

More fundamentally, the Commission's issuance of even a conditional license is wholly incompatible with the Congressional design and intent of the CWA, which assigns the States the role of primary regulator under the statute.<sup>107</sup> Section 401 allows States to condition issuance of a WQC on measures designed to ensure compliance with effluent limitations and other State regulations; each State's conditions, in turn, are required to "become a condition of any Federal

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<sup>104</sup> *Order*, p. 49.

<sup>105</sup> *Id.*, p. 61.

<sup>106</sup> 33 U.S.C. § 1341(a)(1).

<sup>107</sup> *Id.* § 1251(b) (declaring "[i]t is the policy of the Congress to recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution"); *see also D.C. v. Schramm*, 631 F.2d 854, 860 (D.C. Cir. 1980) (noting that "[i]n considering the [CWA], Congress carefully constructed a legislative scheme that imposed major responsibility for control of water pollution on the states").

license or permit subject to the provisions of this section.”<sup>108</sup> Moreover, the United States Supreme Court long ago recognized that the “NGA ‘was designed to supplement state power and to produce a harmonious and comprehensive regulation of the industry.’”<sup>109</sup> And it instructed that “[n]either state nor federal regulatory body was to encroach upon the jurisdiction of the other.”<sup>110</sup> The Commission’s premature issuance of the Certificate entirely subverts each State’s ability and prerogative to satisfy Congress’s intent and design of the governing statutory scheme.

Moreover, the very terms outlined in the Certificate directly conflict with the CWA by subjugating the States’ roles to that of the Commission. The Certificate provides that “[a]ny state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this [C]ertificate.”<sup>111</sup> This turns the statutory scheme on its head. “The [CWA] gives a primary role to states to block ... local water projects ... [the Commission’s] role [under Section 401] is limited to awaiting, and then deferring to, the final decision of the state.”<sup>112</sup>

**(3) A court will not give the Commission *Chevron* deference on water quality issues.**

Rest assured that a court will not give *Chevron* deference<sup>113</sup> to the Commission on water quality issues, as it is MADEP, CTDEEP, and NYSDEC that are authorized to decide whether Massachusetts, Connecticut, or New York water quality standards, respectively, might be

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<sup>108</sup> 33 U.S.C. § 1341(d).

<sup>109</sup> *Northwest Central Pipeline v. State Corp. Commission*, 489 U.S. 493, 512, 109 S. Ct. 1262, 1275 (1989); *quoting FPC v. Panhandle Eastern Pipe Line Co.*, 337 U.S. 498, 513 69 S. Ct. 1251, 1260 (1949).

<sup>110</sup> *Id.*

<sup>111</sup> *Order*, p. 51.

<sup>112</sup> *City of Tacoma*, 460 F.3d at 67 (citation and internal quotation marks omitted).

<sup>113</sup> *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843-44, 104 S. Ct. 2778, 2782-83 (1984).

violated.<sup>114</sup> Any statements in the FEIS about the purported lack of impacts on water resources, and the mitigating effects of best management practices, have little relevance to this rehearing, or subsequent appeal.

**(4) The NGA requires that the Order be rescinded.**

The Commission violated federal law by expropriating for itself a purported right to issue the Certificate prior to necessary State action. The NGA mandates that the Commission “comply with applicable schedules established by Federal law.”<sup>115</sup> One of those laws is the CWA, which expressly states that a WQC must be obtained before any federal license is issued.<sup>116</sup> Consequently, the March 3, 2015 Order violates applicable law and must be rescinded.

**4. COMMUNICATIONS**

Communication and correspondence regarding this proceeding should be served upon:

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**5. CONCLUSION**

The Commission had a fundamental obligation to Boston and the public at large to access and address the safety issues presented by the AIM Project and to make its determinations with

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<sup>114</sup> *Alabama Rivers Alliance v. FERC.*, 325 F.3d 290, 296-97 (D.C. Cir. 2003).

<sup>115</sup> 15 U.S.C. § 717n(c)(1)(B).

<sup>116</sup> *Cf. Altamont Gas Transmission Co. v. FERC*, 92 F.3d 1239, 1248 (D.C. Cir. 1996), *cert. denied*, *Indicated Expansion Shippers v. FERC*, 520 U.S. 1204, 117 S. Ct. 1568 (1997) (concluding that the Commission cannot use its conditioning authority under the NGA to “do indirectly what it could not do directly, that is, intercede in a matter that the Congress reserved to the State”).

respect to those safety issues based on substantial evidence. It failed to do so and thereby failed to meet the requirements of the Natural Gas Act.

In performing its regulatory role, the Commission is not at liberty to violate federal law. It has violated the Clean Water Act and, by extension, the Natural Gas Act.

Boston respectfully requests that the Commission grant this request for rehearing and rescission of the Order.

Respectfully submitted this 2<sup>nd</sup> day of April, 2015.

/s/ Thomas S. Fitzpatrick  
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**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

Algonquin Gas Transmission, LLC	)	
	)	Docket No. CP 14-96-000
	)	

**REQUEST FOR REHEARING OF RIVERKEEPER, INC.**

Pursuant to section 19(a) of the Natural Gas Act (“NGA”), 15 U.S.C. § 717r(a), and Rule 713 of the Federal Energy Regulatory Commission’s (“FERC” or “Commission”) Rules of Practice and Procedure, 18 C.F.R. § 385.713, Riverkeeper, Inc. (“Riverkeeper”) hereby requests rehearing and rescission of the Commission’s March 3, 2015 Order Issuing Certificate and Approving Abandonment (“Order”) under sections 7(c) and 7(b) of the NGA, 15 U.S.C. §§ 717f(c), (b), for the Algonquin Incremental Market Project (“AIM Project”) in the above captioned proceeding. As set forth below, FERC’s issuance of the Order prior to receiving Water Quality Certification from New York State violated the Clean Water Act (“CWA”), 33 U.S.C. §§ 1251 *et seq.*, and the environmental review underlying the Order is contrary to the requirements of the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4231 *et seq.*, and its implementing regulations at 40 C.F.R. Parts 1500-1508, governing segmentation and evaluation of environmental impacts. Finally, the Commission erred by failing to mandate supplemental environmental review as part of Condition 16 of the Order in the event that the current crossing plan for the Hudson River is unsuccessful.

**I. Statement of Issues**

As described more fully in section III, below, Riverkeeper requests rehearing and rescission of the Order on the following grounds:

- 1. The Commission erred by issuing the Order prior to receiving Water Quality**



**Certification from New York State, in violation of the CWA.** Section 401 of the CWA, 33 U.S.C. § 1341, requires an applicant for a federal license or permit to obtain certification that the proposed activity complies with state water quality standards. State Water Quality Certification must be granted or waived before a federal license or permit can be issued. Section 3(d) of the NGA, 15 U.S.C. § 717b(d)(3), specifically preserves the rights of states under the CWA, including the right to impose more stringent conditions when granting Water Quality Certification. *See PUD No. 1 v. Wash. Dep't of Ecology*, 511 U.S. 700 (1994); *City of Tacoma v. FERC*, 460 F.3d 53 (D.C. Cir. 2006). FERC violated the CWA by issuing the Order prior to receiving Water Quality Certification from New York State and by attempting to limit states' powers pursuant to CWA section 401.

2. **The Commission erred by segmenting environmental review of the AIM, Atlantic Bridge, and Access Northeast Projects, contrary to the requirements of NEPA.**

Pursuant to NEPA's implementing regulations at 40 C.F.R. §§ 1508.25(a) and 1508.18(a), connected, cumulative, and similar actions must be evaluated together in a single environmental impact statement ("EIS"). The AIM Project is the first of three planned projects that will upgrade and expand capacity of the Algonquin pipeline system. Following the AIM Project, the Applicant plans to undertake the Atlantic Bridge Project and Access Northeast Project. These three projects are connected, cumulative, and similar actions that must be evaluated together, and FERC misapplied the law by failing to do so. *See Delaware Riverkeeper Network, et al. v. Federal Energy Regulatory Commission*, 753 F.3d 1304 (D.C. Cir. 2014); *Transcontinental Gas Pipe Line Company*,

*LLC* 149 FERC ¶ 61,258 (2014). The Commission erred by segmenting environmental review of the AIM, Atlantic Bridge, and Access Northeast Projects.

3. **The Commission erred by concluding that the AIM Project’s water quality impacts will be avoided or adequately mitigated, as the EIS failed to provide the “hard look” required by NEPA.** In accordance with NEPA and its implementing regulations at 40 C.F.R. § 1500.1(b) and 1502.16 (a), (b), the full range of environmental impacts of a proposed action must be disclosed and evaluated and an agency must take a “hard look” at its environmental consequences before making a decision regarding that action. The AIM Project EIS contains several significant deficiencies – including failure to include missing information regarding water quality impacts and mitigation measures, and failure to evaluate impacts from stormwater runoff – and does not provide the hard look at environmental consequences required by NEPA. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989); *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067 (9<sup>th</sup> Cir. 2011); *Monroe Cnty. Conservation Council, Inc. v. Volpe*, 472 F.2d 693 (2<sup>nd</sup> Cir. 1972); *Ohio Valley Envtl. Coal v. U.S. Army Corps of Eng’rs*, 674 F. Supp. 2d 783 (S.D. W.Va. 2009). As a result, the EIS does not provide sufficient basis for FERC’s determination that water quality impacts will be avoided or adequately mitigated and the Commission erred in finding otherwise.
4. **The Commission erred by failing to mandate supplemental environmental review as part of Condition 16 of the Order, which directs the Applicant to submit an alternative construction crossing plan in the event that the use of horizontal directional drilling (“HDD”) to cross the Hudson River is unsuccessful.** NEPA’s implementing regulations at 40 C.F.R. § 1502.9(c)(1) require the preparation of a

supplemental environmental impact statement (“SEIS”) when there are “substantial changes” or “significant new circumstances or information” relevant to the environmental concerns of a proposed action. In the event that the current planned method of crossing the Hudson River via the trenchless crossing method HDD proves unsuccessful, and the Applicant follows the instructions set forth in Condition 16 of the Order and submits an alternative crossing plan for review and approval, the Commission must evaluate the new plan in an SEIS before taking action. *See Marsh v. Oregon Natural Resources Council*, 490 U.S. 360 (1989). FERC erred by failing to mandate supplemental environmental review as part of Condition 16 in the event that a new crossing plan for the Hudson River is required.

## **II. Statement of Relevant Facts**

On February 28, 2014, Algonquin Gas Transmission, LLC (“Algonquin” or “Applicant”) – a wholly owned subsidiary of Spectra Energy – filed with the Commission an application for a Certificate of Public Convenience and Necessity (“Application”) for the AIM Project.<sup>1</sup> The AIM Project spans the states of New York, Connecticut, Rhode Island, and Massachusetts, and involves the replacement and expansion of approximately 37 miles of the existing Algonquin pipeline system, the upgrade of multiple compressor stations, and the upgrade of existing and construction of new metering and regulating stations along the pipeline route.<sup>2</sup> Once in operation, the AIM Project is expected to provide 342,000 dekatherms (“Dth”) per day of natural

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<sup>1</sup> Algonquin Gas Transmission, LLC, Abbreviated Application for a Certificate of Public Convenience and Necessity, Federal Energy Regulatory Commission (“FERC” or “Commission”) Docket No. CP 14-96-000 (filed Feb. 28, 2014).

<sup>2</sup> FERC, Order Issuing Certificate and Approving Abandonment for the Algonquin Incremental Market Project, FERC Docket No. CP 14-96-000 (issued Mar. 3, 2015) (“Order”) ¶ 4-6.

gas transportation service to city gate delivery points in Connecticut, Rhode Island, and Massachusetts.<sup>3</sup> The projected in service date for the AIM Project is November 2016.<sup>4</sup>

In New York State, the AIM Project involves the take up and relay of more than 15 miles of pipeline, replacing the existing 26 inch pipe with new 42 inch pipe, approximately two miles of new pipeline, and a new Hudson River crossing. The New York portion of the AIM Project also includes the upgrade of two compressor stations and two metering and regulating stations. The majority of the New York portion of the AIM Project is located within the Hudson River watershed, while approximately two miles of pipeline replacement and the expansion of the Southeast Compressor Station are located within a portion of the New York City drinking water supply watershed (“NYC watershed”), which provides drinking water for nine million New Yorkers. In New York, the AIM Project involves the crossing of 34 waterbodies and 77 wetlands, and the disturbance of approximately 24 acres of wetlands.<sup>5</sup> Stormwater runoff and downstream turbidity caused by construction within the NYC watershed will also potentially impact impaired drinking water supply reservoirs.<sup>6</sup>

The AIM Project is the first of multiple planned upgrades to the Algonquin pipeline system. The second is the Atlantic Bridge Project, which is also located in New York, Connecticut, Rhode Island, and Massachusetts, and involves the replacement and expansion of approximately 36 miles of the existing Algonquin pipeline system, upgrade of two compressor stations, two metering and regulating stations, and one regulator station, and construction of one new compressor station and two new metering and regulating stations. The Atlantic Bridge Project also entails modifications to facilitate south to north transportation on the Maritimes &

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<sup>3</sup> *Id.* ¶ 1.

<sup>4</sup> FERC, Algonquin Incremental Market Project Final Environmental Impact Statement, FERC Docket No. CP 14-96-000 (issued Jan. 23, 2015) (“FEIS”) at 2-37.

<sup>5</sup> *Id.*, Appendices I & K at I-1 – I-3 & K-1 – K-4.

<sup>6</sup> *Id.* at 4-39 – 4-40.

Northeast pipeline system, to which the Algonquin pipeline system connects in Massachusetts. Once in operation, the Atlantic Bridge Project is expected to provide up to 222,000 Dth per day of transportation service to delivery points along the Algonquin system and to the Maritimes & Northeast pipeline for delivery to points in Maine and Canada. The projected in service date for the Atlantic Bridge Project is November 1, 2017.<sup>7</sup>

In New York State, the Atlantic Bridge Project will result in the take up and relay of approximately seven miles of pipeline, replacing the existing 26 inch pipe with new 42 inch pipe, and the upgrade of two metering and regulating stations. The entire New York portion of the Atlantic Bridge Project is located within the NYC and Hudson River watersheds. In fact, the majority of the New York portion of the project – approximately six miles – is located within the NYC watershed,<sup>8</sup> and continues construction in Yorktown, New York at the precise location where the AIM Project ends. *See* AIM and Atlantic Bridge project maps, attached as Exhibits 1 & 2, respectively. In addition to as yet unquantified waterbody crossings and wetland disturbance, stormwater runoff and downstream turbidity caused by construction within the NYC watershed will potentially impact impaired drinking water supply reservoirs.

Nearly four of the six miles of pipeline replacement proposed as part of the Atlantic Bridge Project in Yorktown and Somers, New York were originally proposed as part of the AIM Project. According to the Applicant's July 2013 draft Environmental Report for the AIM Project, the initial project proposal involved take up and relay of 26 inch pipe with 42 inch pipe within approximately six miles of the NYC watershed in Cortlandt, Yorktown, and Somers, New

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<sup>7</sup> Algonquin Gas Transmission, LLC and Maritimes & Northeast Pipeline, LLC, Atlantic Bridge Project Environmental Report, Resource Report 1 – General Project Description, Pre-Filing Draft, FERC Docket No. PF 15-12-000 (Mar. 2015) (“Atlantic Bridge Resource Report 1”) at 1-1 – 1-2.

<sup>8</sup> *Id.* at 1-6 – 1-10.

York.<sup>9</sup> See July 2013 initial AIM project map, attached as Exhibit 3. The AIM Project was later modified, and the portion of the project in the NYC watershed was shortened to an approximately two mile segment from Cortlandt to Yorktown, New York. An approximately four mile segment in Yorktown and Somers, New York was removed from the project.<sup>10</sup> See Exhibit 1. That same four mile segment – take up and relay of 26 inch pipe with 42 inch pipe from Yorktown to Somers, New York – has now been repropose as part of the Atlantic Bridge Project.<sup>11</sup> See Exhibit 2.

Algonquin, jointly with Maritimes & Northeast Pipeline, LLC, requested permission to begin the pre-filing review process for the Atlantic Bridge Project on January 30, 2015 – one week after FERC issued the Final Environmental Impact Statement (“FEIS”) for the AIM Project – and was granted pre-filing approval on February 20, 2015.<sup>12</sup> The Applicant plans to submit its application for a Certificate of Public Convenience and Necessity for the Atlantic Bridge Project no later than September 2015.<sup>13</sup>

The third planned upgrade to the Algonquin pipeline system is the Access Northeast Project, which involves upgrades to the Algonquin and Maritimes & Northeast pipeline systems for the purposes of expanding natural gas transportation service to New England. The Access Northeast Project, in combination with the AIM and Atlantic Bridge Projects, is expected to provide an additional 1.5 billion cubic feet per day of capacity on the Algonquin pipeline system. See Spectra Energy website, Access Northeast, attached as Exhibit 4. The Applicant plans to

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<sup>9</sup> Algonquin Gas Transmission, LLC, Algonquin Incremental Market Project Environmental Report, Resource Report 1 – General Project Description, Pre-Filing Draft, FERC Docket No. PF 13-16-000 (Jul. 2013), Appendix 1A.

<sup>10</sup> Algonquin Gas Transmission, LLC, Algonquin Incremental Market Project Environmental Report, Resource Report 1 – General Project Description, FERC Docket No. CP 14-96-000 (Feb. 2014), Appendix 1A.

<sup>11</sup> Atlantic Bridge Resource Report 1, Appendix 1A.

<sup>12</sup> FERC, Approval of Pre-Filing Request: Atlantic Bridge Project, FERC Docket No. PF 15-12-000 (issued Feb. 20, 2015).

<sup>13</sup> *Id.*

request pre-filing review beginning in late 2015, file an application for a Certificate of Public Convenience and Necessity in 2016, and place the Access Northeast Project in service by November 2018. *See* Exhibit 4 & Access Northeast website, FAQs, attached at Exhibit 5. Specific details regarding project construction have not yet been made publicly available.

Riverkeeper submitted comments regarding the scope of the Draft Environmental Impact Statement (“DEIS”) for the AIM Project on October 15, 2013<sup>14</sup> and on the application for a Certificate of Public Convenience and Necessity on April 8, 2014.<sup>15</sup> In those comments, Riverkeeper identified a number of issues related to water quality and the AIM Project’s likely impacts on both the Hudson River and NYC watersheds – including those related to stormwater, erosion and sedimentation, Hudson River and other waterbody crossings, and wetland and buffer disturbance – and urged the Commission to conduct a comprehensive environmental review pursuant to NEPA.

FERC issued the AIM Project DEIS on August 6, 2014.<sup>16</sup> Riverkeeper submitted detailed comments on the DEIS, and called on FERC to correct several significant deficiencies and revise and resubmit the DEIS for public review and comment.<sup>17</sup> The DEIS failed to comply with the requirements of NEPA in a number of respects, including relying on incomplete information, conducting an inadequate analysis of impacts to water resources, and impermissibly segmenting environmental review.

The Commission declined to revise and reissue the DEIS, and on January 23, 2015, issued the FEIS for the AIM Project. As discussed in section III, below, several significant

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<sup>14</sup> Riverkeeper, Comments Regarding Scope of the Environmental Impact Statement for the Algonquin Incremental Market Project, FERC Docket No. PF 13-16-000 (filed Oct. 15, 2013).

<sup>15</sup> Riverkeeper, Comments on Abbreviated Application of Algonquin Gas Transmission, LLC for Certificate of Public Convenience and Necessity, FERC Docket No. CP 14-96-000 (filed Apr. 8, 2014).

<sup>16</sup> FERC, Draft Environmental Impact Statement for the Algonquin Incremental Market Project, FERC Docket No. CP 14-96-000 (Aug. 2014) (“DEIS”).

<sup>17</sup> Riverkeeper, Comments on Algonquin Incremental Market Project Draft Environmental Impact Statement, FERC Docket No. CP-14-96-000 (filed Sep. 29, 2014) (“Riverkeeper DEIS comments”).

deficiencies remain in the FEIS, which falls far short of the requirements of NEPA. Though the FEIS includes some of the information that was missing in the DEIS, the evaluation of impacts to water resources in the FEIS remains woefully inadequate, with significant pieces of information still missing and almost no evaluation of likely significant impacts resulting from stormwater runoff. Finally, the FEIS continues to impermissibly segment review of the AIM, Atlantic Bridge, and Access Northeast Projects, effectively failing to address the full scope and impact of the planned upgrades to the Algonquin pipeline system.

On March 3, 2015, despite the significant deficiencies in the FEIS and the fact that the Applicant had yet to obtain the required Water Quality Certification from New York State, the Commission issued the Order approving the AIM Project and granting a Certificate of Public Convenience and Necessity. The Order incorporates a list of environmental conditions recommended in the FEIS, including several requests for additional information and/or approvals prior to project construction.<sup>18</sup> Condition 16 of the Order, which was not included in the DEIS, but raised for the first time in the FEIS, instructs the Applicant to file an alternative construction crossing plan for review and approval in the event that the planned use of the trenchless crossing method HDD to install new pipeline under the Hudson River is unsuccessful.<sup>19</sup> On March 30, 2015, Riverkeeper filed a letter with the Commission regarding Condition 16 and the necessity of undertaking supplemental environmental review pursuant to NEPA in the event that an alternative crossing plan for the Hudson River is required.<sup>20</sup>

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<sup>18</sup> Order, Appendix B.

<sup>19</sup> *Id.*, Appendix B ¶ 16. Condition 16 instructs Algonquin to “file this plan concurrent with the submission of its application to the U.S. Army Corps of Engineers and other applicable agencies for a permit to construct using this alternative crossing plan.”

<sup>20</sup> Riverkeeper, Letter re Final Environmental Impact Statement and Order Issuing Certificate and Approving Abandonment for the Algonquin Incremental Market Project, FERC Docket No. CP 14-96-000 (filed Mar. 30, 2015) (“Riverkeeper Alternative Hudson Crossing Letter”).



For the reasons set forth below, Riverkeeper requests rehearing and rescission of the Order on the grounds that the Commission violated the CWA by approving the AIM Project prior to receiving Water Quality Certification from New York State and failed to comply with the requirements of NEPA in its environmental review and approval of the project.

### **III. Argument**

The subsections below correspond to the numbered paragraphs in section I, above, and set forth in detail Riverkeeper's position regarding the identified issues.

#### **Issue 1: The Commission erred by issuing the Order prior to receiving Water Quality Certification from New York State, in violation of the CWA.**

Pursuant to Section 401 of the CWA, 33 U.S.C. § 1341, anyone applying for a federal license or permit<sup>21</sup> to conduct an activity which may result in a discharge to navigable waters must obtain certification that the activity complies with applicable state water quality standards, and the federal agency charged with reviewing that application may not grant a license or permit unless and until such certification is granted or waived. CWA Section 401 plainly states that “no license or permit shall be granted until the certification required by this section has been obtained or has been waived.” *Id.* § 1341(a) (emphasis added). The Supreme Court agreed, finding that “[section] 401 of the [Clean Water] Act requires states to provide a water quality certification before a federal license or permit can be issued.” *PUD No. 1 v. Wash. Dep’t of Ecology*, 511 U.S. 700, 707 (1994) (emphasis added). Therefore, “without [section 401] certification, FERC lacks authority to issue a license.” *City of Tacoma v. FERC*, 460 F.3d 53, 68 (D.C. Cir. 2006).

Despite the clear requirements of CWA section 401, the Commission issued the Order approving the AIM Project prior to receiving Water Quality Certification from New York State.

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<sup>21</sup> FERC's Order issuing a Certificate of Public Certificate and Necessity constitutes a “license or permit” for the purposes of Clean Water Act section 401, as it was granted to permit an “activity which may result in any discharge into the navigable waters of the United States.” 40 C.F.R. § 121.1(a).

Nor has New York waived its section 401 authority. As of this date, the New York State Department of Environmental Conservation has issued a Notice of Complete Application for Algonquin's Water Quality Certification and accepted public comments,<sup>22</sup> but has not yet made a decision whether to grant or deny.

The fact that the Commission conditioned construction authorization for the AIM Project on receipt of "all applicable authorizations required under federal law"<sup>23</sup> – which presumably includes section 401 Water Quality Certification – does not constitute compliance with the CWA. Section 401 of the CWA requires Water Quality Certification prior to the granting of a federal license or permit, and makes no exception for projects where final construction authorization is conditioned on receipt of the required Water Quality Certification after a license or permit has been issued. To do so flips the plain requirements of section 401 and undermines its purpose, which is to give states the authority to approve, deny, or condition projects that will impact water quality within their borders.

Moreover, FERC's issuance of the Order and environmental conditions prior to receiving New York State's Water Quality Certification usurps the state's authority to issue its own conditions for the AIM Project. In lieu of simply granting Water Quality Certification, a state may choose to approve a project pursuant to CWA section 401 contingent on the imposition of certain conditions, which, in turn, must be incorporated into the federal license or permit. 33 U.S.C. § 1341(d); *see also PUD No. 1*, 511 U.S. 713-714 ("States may condition certification upon any limitations necessary to ensure compliance with state water quality standards or 'any other appropriate requirements of State law.'"). In order to ensure that a state's authority to impose conditions when granting Water Quality Certification is not curtailed, FERC must

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<sup>22</sup> New York State Department of Environmental Conservation, Notice of Complete Application and Notice of Legislative Public Comment Hearing (Dec. 31, 2014).

<sup>23</sup> Order, Appendix B ¶ 9.

receive such certification before approving a project so that the approval will incorporate the state's – and not just FERC's – required conditions.

Finally, by decreeing that “[a]ny state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this certificate,”<sup>24</sup> the Commission stepped beyond the authority granted to it by the NGA and impermissibly attempted to limit states' powers under the CWA. The NGA specifically preserves the rights of states under the CWA. 15 U.S.C. § 717b(d)(3). This includes a state's right to impose more stringent conditions pursuant to section 401 Water Quality Certification, which underscores why, as discussed above, such certification must come before the issuance of a federal license or permit, not after. FERC may not limit a state's Water Quality Certification conditions to those consistent with its own Order; instead, it must incorporate the state's conditions into its Order. *See City of Tacoma*, 460 F.3d at 67 (“The Clean Water Act gives a primary role to states ‘to block... local water projects’ by imposing and enforcing water quality standards that are more stringent than applicable federal standards ... FERC's role [under CWA Section 401] is limited to awaiting, and then deferring to, the final decision of the state.”) (internal citations omitted).

Accordingly, FERC violated the CWA by issuing the Order approving the AIM Project prior to receiving Water Quality Certification from New York State. The Commission must rescind the Order and only reissue it if and when the Applicant receives the required Water Quality Certification. If the Applicant does receive Water Quality Certification, the Commission must then fully incorporate all conditions contained therein into any future Order.

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<sup>24</sup> *Id.* ¶ 151.

**Issue 2:      The Commission erred by segmenting environmental review of the AIM, Atlantic Bridge, and Access Northeast Projects, contrary to the requirements of NEPA.**

As discussed in section II, above, the AIM Project is the first of three projects to be undertaken by the Applicant that will upgrade and expand capacity of the Algonquin pipeline system from November 2016 to November 2018. The second is the Atlantic Bridge Project, which has begun FERC pre-filing review and will involve construction in New York, Connecticut, Rhode Island, and Massachusetts. The projected in service date for the Atlantic Bridge project is November 2017, one year after the targeted in service date for the AIM Project. The third is the Access Northeast Project, which builds upon capacity upgrades that will be undertaken by the AIM and Atlantic Bridge Projects, has been announced by the Applicant's parent company, Spectra Energy, and has a projected in service date of November 2018. While the FEIS includes a limited discussion of the Atlantic Bridge Project as part of the cumulative impacts section, the Access Northeast Project is merely raised and dismissed "because details are unknown."<sup>25</sup>

Despite numerous public comments, including Riverkeeper's, that raised concerns regarding impermissible segmentation of the AIM, Atlantic Bridge, and Access Northeast Projects, FERC chose to continue to limit the scope of the EIS to the AIM Project.<sup>26</sup> As set forth below, this decision was in error, and the Commission must rescind the Order and properly combine review of all three projects.

Pursuant to the regulations implementing NEPA, an EIS must include: 1) connected actions, including those that are "interdependent parts of a larger action and depend on the larger action for their justification;" 2) cumulative actions, "which when viewed with other proposed

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<sup>25</sup> FEIS at 4-282 – 4-300; Order ¶¶ 112-119.

<sup>26</sup> Order ¶ 108-111.

actions have cumulatively significant impacts;” and 3) similar actions, “which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together.” 40 C.F.R. § 1508.25(a).

Accordingly, “[a]n agency impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration.” *Delaware Riverkeeper Network, et al. v. Federal Energy Regulatory Commission*, 753 F.3d 1304, 1313 (D.C. Cir. 2014).

In *Delaware Riverkeeper Network*, the Court held that the Commission violated NEPA when it segmented environmental review of four separate proposals by Tennessee Gas Pipeline Company to upgrade different sections of the Eastern Leg of its 300 Line. Finding that the four projects were “certainly ‘connected actions,’” the Court explained:

“There is a clear physical, functional, and temporal nexus between the projects. There are no offshoots to the Eastern Leg. The new pipeline is linear and physically interdependent; gas enters the system at one end, and passes through each of the new pipeline sections and improved compressor stations on its way to extraction points beyond the Eastern Leg. The upgrade projects were completed in the same general time frame, and FERC was aware of the interconnectedness of the projects ... [t]he end result is a new pipeline that functions as a unified whole thanks to the four interdependent upgrades.”

752 F.3d at 1308-1309. The Court went on to dismiss claims that there were logical termini between any of the new upgrade segments or that any possessed substantial independent utility apart from the others, finding that the projects were “inextricably intertwined” as part of the same linear pipeline. *Id.* at 1315-1317.

The AIM, Atlantic Bridge, and Access Northeast Projects fall into all three categories of actions that must be evaluated together in an EIS pursuant to 40 C.F.R. § 1508.25(a). First, as in *Delaware Riverkeeper Network*, the AIM, Atlantic Bridge, and Access Northeast Projects are

connected actions without independent utility, as all are interdependent parts of a larger action: the upgrade and expansion of the Algonquin pipeline system. The AIM and Atlantic Bridge Projects involve upgrade and expansion of different segments of the Algonquin pipeline system in the same four states, with several sections of both projects involving the take up of existing 26 inch pipe and replacing it with larger 42 inch pipe. In addition, four of the six miles of the Atlantic Bridge Project proposed within the NYC watershed were originally proposed as part of the AIM Project, and later separated into different project proposals. *See* discussion in Section II, above, and Exhibits 1, 2, & 3.

While construction details regarding the Access Northeast Project have not yet been made publicly available, information announced by Spectra Energy, the Applicant's parent company, make clear that it is inextricably intertwined with the AIM and Atlantic Bridge Projects. According to Spectra, Access Northeast involves "expanding Spectra Energy's Algonquin and Maritimes & Northeast systems." *See* Exhibit 4. Despite Spectra's claim that the three projects are independent, its description of the Access Northeast Project notes that the "AIM expansion project will begin to de-bottleneck the pipeline system by winter of 2016, helping to enhance reliability and reduce natural gas price volatility in New England." *See* Exhibit 5. Spectra also estimates total pipeline capacity expansion by adding all three projects together, noting that combined with the AIM and Atlantic Bridge Projects, the Access Northeast Project will increase capacity on the system 150% by 2018. *See* Exhibit 4.

Further, the Algonquin pipeline is linear, running in a line from New Jersey through New York, Connecticut, Rhode Island, and Massachusetts before connecting with the Maritimes & Northeast pipeline system. The finished projects will function as a unified whole, and upgrade and expand sections of the same linear pipeline system that will deliver gas to Northeast

consumers and the Maritimes & Northeast pipeline system. All three projects are also closely connected in time, with each coming online exactly one year after the other from 2016 through 2018: first the AIM Project in November 2016, then the Atlantic Bridge Project in November 2017, and finally the Access Northeast Project in November 2018.

Second, the AIM, Atlantic Bridge, and Access Northeast Projects are cumulative actions, as each would affect many of the same resources in the same area, and the combined, incremental effect of each has the potential to be cumulatively significant. FERC recognized that the AIM and Atlantic Bridge Projects are cumulative actions with “facilities within the same area of influence.”<sup>27</sup> Despite the Commission’s dismissal of the Access Northeast Project “because [it] will not occur at the same time as the AIM Project ... and details are unknown,”<sup>28</sup> it is also a cumulative action with both the AIM and Atlantic Bridge Projects. The Access Northeast Project is being constructed in the same area, during the same general timeframe, and will likely affect many of the same resources as the AIM and Atlantic Bridge Projects. It is also being undertaken by the same company, meaning that details regarding project plans and likely impacts should be readily available to FERC upon request.

Finally, the AIM, Atlantic Bridge, and Access Northeast Projects are similar actions. The Atlantic Bridge and Access Northeast Projects are certainly reasonably foreseeable, given that both have been publicly announced and the Atlantic Bridge Project has begun FERC pre-filing review. Both projects also share many similarities with the AIM project with respect to project components, construction activities, and likely environmental impacts, as discussed above, that provide a clear basis for evaluating their environmental consequences together.

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<sup>27</sup> *Id.* ¶ 118.

<sup>28</sup> *Id.* ¶ 119.

Despite the evidence that the AIM, Atlantic Bridge, and Access Northeast Projects are connected, cumulative, and similar actions that must be evaluated together pursuant to NEPA, the Commission attempted to justify its decision to limit its evaluation to the AIM Project by maintaining that the “Atlantic Bridge and Access Northeast Projects are not fully defined ‘proposals’ and cannot be segmented by the Commission from its environmental review of the AIM Project under NEPA.”<sup>29</sup>

The Commission misapplied the law and erred in determining that the AIM, Atlantic Bridge, and Access Northeast Projects were not impermissibly segmented due to the fact that FERC does not consider the latter two projects “proposals” at this time. First, NEPA requires a single evaluation of connected, cumulative, and similar “actions,” 40 C.F.R. § 1508.25(a), which “include new and continuing activities, including ... projects approved by federal agencies.” 40 C.F.R. § 1508.18(a). Both the Atlantic Bridge and Access Northeast Projects are actions, *i.e.*, projects which are subject to approval by the Commission: the Atlantic Bridge Project has already begun pre-filing review and the Access Northeast Project has been publicly announced and plans to begin pre-filing review later this year. *See* Exhibit 5.

Second, the decision cited by the Commission in support of its proposition that impermissible segmentation is limited to projects which have reached the proposal stage,<sup>30</sup> *Transcontinental Gas Pipe Line Company, LLC*, 149 FERC ¶ 61,258 at P 66 (2014), is inapposite. The paragraph cited by FERC dismissed segmentation on the grounds that the project at issue had “nothing related to it currently before the Commission and there are no publicly available, quantifiable details about the project.” *Id.* The Atlantic Bridge Project began pre-filing review before the Commission in February 2015, and quite a bit of information

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<sup>29</sup> *Id.* ¶ 110.

<sup>30</sup> *Id.* ¶ 109.



regarding the project, including location of construction, timing, and general environmental impacts are publicly available and have in fact been submitted to FERC multiple times since at least September 2014.<sup>31</sup> And though the Access Northeast Project has not yet begun pre-filing review, related projects – namely the AIM and Atlantic Bridge Projects – are currently before the Commission. Public information regarding capacity goals, project timing, and general location of the Access Northeast Project is also readily available. *See, e.g.*, Exhibits 4 & 5.

Third, even if segmentation review is interpreted to be limited to “proposals” before the Commission, which applicable law does not support and Riverkeeper does not concede, the Atlantic Bridge Project clearly meets that definition. According to the regulation cited by FERC, a proposal under NEPA “exists at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated.” 40 C.F.R. § 1508.23. At this point in the pre-filing review process, FERC’s immediate goal is determining whether and to what extent the Atlantic Bridge Project will be subject to NEPA environmental review. That decision, along with conduct of scoping review if an EIS is to be prepared, happens during the pre-filing process, before the Applicant submits its application for a Certificate of Public Convenience and Necessity. *See* 18 C.F.R. § 157.21(g). Thus, even using the narrow scope of segmentation advocated by FERC in the Order, the Atlantic Bridge Project is a proposal that that has been improperly segmented from environmental review along with the AIM Project.

Finally, segmenting review of the AIM, Atlantic Bridge, and Access Northeast Projects allows the Applicant to evade the full scope and impacts of the projects and is contrary to the

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<sup>31</sup> *See e.g.*, Algonquin Gas Transmission, LLC, Response to DEIS, FERC Docket No. CP 14-96-000 (Sep. 29, 2014), Attachment B; Atlantic Bridge Resource Report 1.

public interest. As discussed above, all three projects involve upgrade and expansion of the same pipeline system, and Spectra is touting the increased system capacity that will result from completion of all three projects. While the Applicant benefits from the overall capacity upgrades that will be provided by the AIM, Atlantic Bridge, and Access Northeast Projects combined, segmenting environmental review of the three projects obfuscates their combined environmental costs. The public can review the combined benefits to transportation service by visiting the Applicant's website, but has no counterpart for clearly evaluating the projects' costs to the environment and communities. That is precisely the role of an environmental impact statement, and by choosing to limit the EIS to the AIM Project and segment the Atlantic Bridge and Access Northeast Projects, FERC has hindered NEPA review and deprived the public of the opportunity to evaluate the true costs of the projects.

Accordingly, the Commission erred by segmenting environmental review of the AIM, Atlantic Bridge, and Access Northeast Projects. The Commission must rescind the Order and properly combine review of all three projects in compliance with NEPA.

**Issue 3:      The Commission erred by concluding that the AIM Project's water quality impacts will be avoided or adequately mitigated, as the EIS failed to provide the "hard look" required by NEPA.**

In accordance with NEPA, federal agencies must take environmental considerations into account in their decision-making "to the fullest extent possible." 42 U.S.C. § 4332. Prior to approving any "major federal action significantly affecting the quality of the human environment," federal agencies must comprehensively evaluate environmental impacts, including adverse environmental effects and any means of preventing them, in a "detailed statement." *Id.* § 4332(2)(C). NEPA requires federal agencies to "take a 'hard look' at environmental consequences" and "provide for broad dissemination of relevant environmental information."

*Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (internal citations omitted).

The public availability of information regarding the environmental impacts of a proposed action is central to NEPA, which requires agencies to make “high quality” information available to “public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b) (emphases added). The opportunity for public participation guaranteed by NEPA ensures that agencies will not take final action until after their analysis of the environmental impacts of their proposed action has been subject to public scrutiny. In situations where “data is not available during the EIS process and is not available to the public for comment ... the EIS process cannot serve its larger informational role, and the public is deprived of their opportunity to play a role in the decision-making process.” *N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011).

In addition, an EIS must fully disclose and evaluate the complete range of environmental consequences of a proposed action, including “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural” impacts, “whether direct, indirect, or cumulative.” 40 C.F.R. §§ 1502.16(a), (b); 1508.8. As an “environmental full disclosure law,” *Monroe Cnty. Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697 (2d Cir. 1972), NEPA “ensures that an agency will not act on incomplete information, at least in part, by ensuring that the public will be able to analyze and comment on an action’s environmental implications.” *Ohio Valley Env’tl. Coal. v. U.S. Army Corps of Eng’rs*, 674 F. Supp. 2d 783, 792 (S.D. W. Va. 2009) (internal quotation marks and citations omitted).

Riverkeeper raised concerns regarding a number of issues where missing, incomplete, and/or insufficiently evaluated information about the AIM Project's water quality impacts in the DEIS precluded meaningful environmental review and asked FERC to revise and reissue the DEIS for public review and comment.<sup>32</sup> The Commission declined to do so, and instead released the FEIS without correcting several of the identified deficiencies relevant to evaluation of water quality impacts. As discussed below, these deficiencies render the FEIS incomplete, and, consequently, the FEIS fails to provide the hard look at environmental impacts required by NEPA and does not provide a sufficient basis for FERC's conclusion that the AIM Project is an "environmentally acceptable action."<sup>33</sup> The Commission therefore erred in determining that water quality impacts will be avoided or adequately mitigated.

***a. Significant pieces of information missing from the DEIS remain outstanding in the FEIS.***

The DEIS identified dozens of pieces of missing information and instructed the Applicant to submit them either prior to the end of the public comment period or prior to construction.<sup>34</sup> While Algonquin submitted some of this information prior to the release of the DEIS, several critical pieces of information are still missing from the FEIS. These include, but are not limited to:

- ➔ A site-specific crossing plan for the Catskill Aqueduct.<sup>35</sup>
- ➔ Revised site-specific crossing plans incorporating additional avoidance or mitigation measures for two vernal pools in New York.<sup>36</sup>
- ➔ A site-specific plan for Harriman State Park, including additional avoidance or mitigation measures.<sup>37</sup>

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<sup>32</sup> Riverkeeper DEIS Comments at 2-8.

<sup>33</sup> *Id.* ¶ 150.

<sup>34</sup> DEIS at 5-17 – 5-25.

<sup>35</sup> FEIS at 5-24; Order, Appendix B ¶ 15.

<sup>36</sup> FEIS at 5-25; Order, Appendix B ¶ 18.

<sup>37</sup> FEIS at 5-25; Order, Appendix B ¶ 20.

Without the information identified above and acknowledged as still outstanding in section 5.2 of the FEIS, the FEIS remains incomplete and fails to comprehensively evaluate environmental impacts. The fact that FERC characterized requests for missing information as mitigation in both the FEIS and the Order does not make them so: in order to comply with NEPA, information regarding baseline conditions, environmental impacts, and the efficacy of proposed mitigation must be included and evaluated in an environmental impact statement prior to project approval. Requesting that this information be supplied as post-approval mitigation does not cure the inadequacy of pre-approval environmental review. *See N. Plains Res. Council*, 668 F.3d at 1083 (the fact that an agency “plans to conduct surveys and studies as part of its post-approval mitigation measures” does not constitute a “sufficiently ‘hard look’” under NEPA). The Commission may not base its decision regarding environmental impacts from the AIM Project on incomplete environmental review.

***b. The FEIS fails to include an evaluation of potentially significant environmental impacts from stormwater runoff.***

Despite the significant risk to water quality, the FEIS fails to include a meaningful evaluation of the impacts from increased stormwater runoff due to construction activities and long-term changes in surface drainage patterns that are likely to be caused by the AIM Project. Rather, the FEIS merely mentions stormwater plans and management in passing, and, for the New York portions of the project, references a Stormwater Pollution Prevention Plan (“SWPPP”) that is still in development and has not been included in the FEIS.<sup>38</sup>

As Riverkeeper detailed in our comments on the DEIS, stormwater runoff from construction can carry pollutants – such as debris, oil and other contaminants from equipment, and any herbicides used for vegetation clearing or right of way maintenance – from the project

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<sup>38</sup> FEIS at 4-40.

site to downstream wetlands, streams, and other waterbodies. Construction site runoff can also erode exposed soils and transport sediment to receiving waters, decreasing water quality and degrading aquatic wildlife habitat, reducing species diversity, and damaging commercial and recreational fisheries. Long-term changes in hydrology and surface drainage patterns may also result from construction activities, particularly in areas, such as steep slopes, where changes in ground cover and topography can increase stormwater runoff, reduce the ability of natural systems to filter pollutants, and permanently alter drainage patterns.<sup>39</sup>

Consideration of impacts from stormwater runoff is important throughout the project, particularly so within the NYC watershed. As noted in section II, above, and in Riverkeeper's comments on the DEIS, the NYC watershed provides drinking water to nine million New Yorkers daily, and the AIM Project is located within a sensitive portion of the NYC watershed that is already impaired and subject to enhanced water quality protection criteria. If not properly controlled, stormwater runoff and downstream sedimentation caused by the AIM Project have the significant potential to degrade water quality and drinking water supplies.<sup>40</sup>

However, the FEIS contains only a cursory mention of stormwater runoff, and fails to include any substantive evaluation of its likely water quality impacts or mitigation measures, such as a detailed SWPPP, specific description of how the AIM Project construction schedule will be phased to coordinate with control measures contained therein, and consideration of alternative construction practices that can be used to avoid or reverse soil compaction and thereby prevent runoff volume. Without this evaluation, the FEIS is incomplete and fails to take the requisite hard look at the AIM Project's potentially significant water quality impacts.

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<sup>39</sup> Riverkeeper DEIS Comments at 6-7.

<sup>40</sup> *Id.* at 2; 6-7.

**Issue 4:      The Commission erred by failing to mandate supplemental environmental review as part of Condition 16 of the Order, which directs the Applicant to submit an alternative construction crossing plan in the event that the use of HDD to cross the Hudson River is unsuccessful.**

Condition 16 of the Order instructs the Applicant to file an alternative construction crossing plan for review and approval in the event that the planned use of HDD to cross the Hudson River is unsuccessful.<sup>41</sup> While the Commission notes that Algonquin would need to file applications with the U.S. Army Corps of Engineers and “other applicable agencies” and receive explicit approval for any alternative crossing plan,<sup>42</sup> it fails to specify that supplemental environmental review, in the form of a Supplemental Environmental Impact Statement (“SEIS”), would also be required.

Under NEPA, when there are “substantial changes in the proposed action that are relevant to environmental concerns” or “significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts,” an SEIS must be prepared. 40 C.F.R. § 1502.9(c)(1); *see also Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989) (“If there remains ‘major Federal actio[n]’ to occur, and if the new information is sufficient to show that the remaining action will ‘affec[t] the quality of the human environment’ in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared”).

As discussed in Riverkeeper’s March 30, 2015 letter to the Commission, using an alternative crossing method for the Hudson River would constitute a substantial change to the AIM Project with radically different environmental impacts.<sup>43</sup> Through the pre-filing, application, and environmental review processes, the Applicant has maintained that it will use

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<sup>41</sup> Order, Appendix B ¶ 16.

<sup>42</sup> *Id.*

<sup>43</sup> Riverkeeper Alternative Hudson Crossing Letter at 3-4.

HDD, a trenchless crossing method, to install new 42 inch pipeline under the Hudson River. Given the Applicant's commitment to using HDD, no other potential method of crossing the Hudson River was evaluated during the environmental review process. Rather, FERC inserted Condition 16 as a recommended condition in the FEIS – without previously including it in the DEIS that was released for public review and comment – and subsequently adopted it as a condition of the Order. While FERC is correct to require additional review and approval in the event that HDD is unsuccessful and the Applicant prepares an alternative crossing plan, it may not make a determination regarding any alternative crossing plan for the Hudson River without first undertaking supplemental environmental review pursuant to NEPA. The Commission erred by failing to mandate supplemental environmental review as part of Condition 16, which must be revised.

#### **IV. Conclusion**

For the reasons set forth above, Riverkeeper respectfully asks the Commission to grant this request for rehearing and rescission of the Order.

Respectfully submitted,



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Dated: April 2, 2015

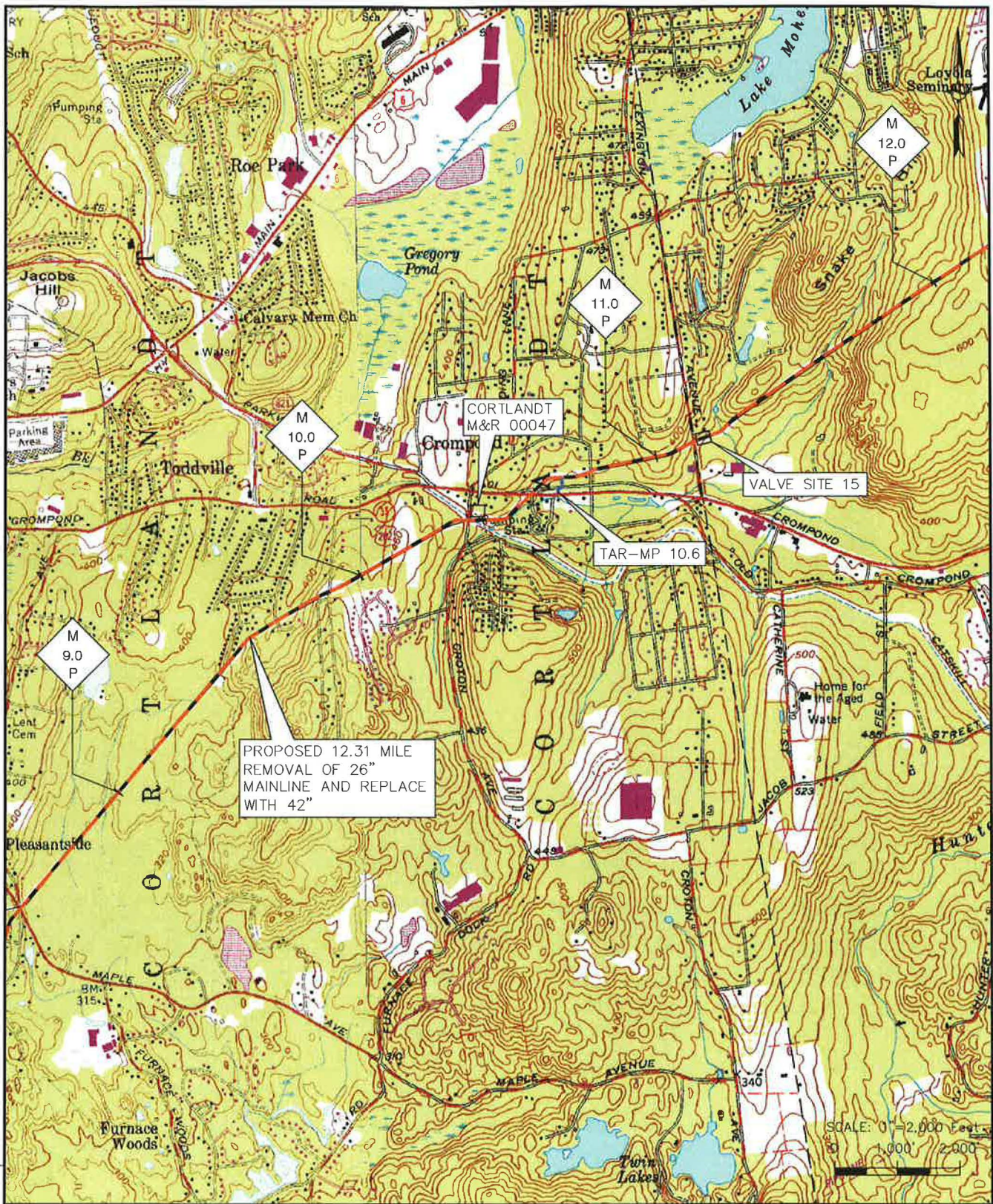


# Exhibit 1: AIM project map

Algonquin Gas Transmission, LLC, Algonquin Incremental Market Project Environmental Report, Resource Report 1 – General Project Description, FERC Docket No. CP 14-96-000 (Feb. 2014), Appendix 1A



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ALGONQUIN INCREMENTAL MARKET PROJECT  
STONY POINT DISCHARGE - USGS QUAD EXCERPT (STONY POINT - YORKTOWN HEIGHTS, NY)

LOC.: WESTCHESTER COUNTY, NEW YORK

REV.: M

CKD. BY: JP

ENG.: CCW

DATE: 02/2014

W.O.: 101490

DRN. BY: CLP

SCALE: 1"=2,000'

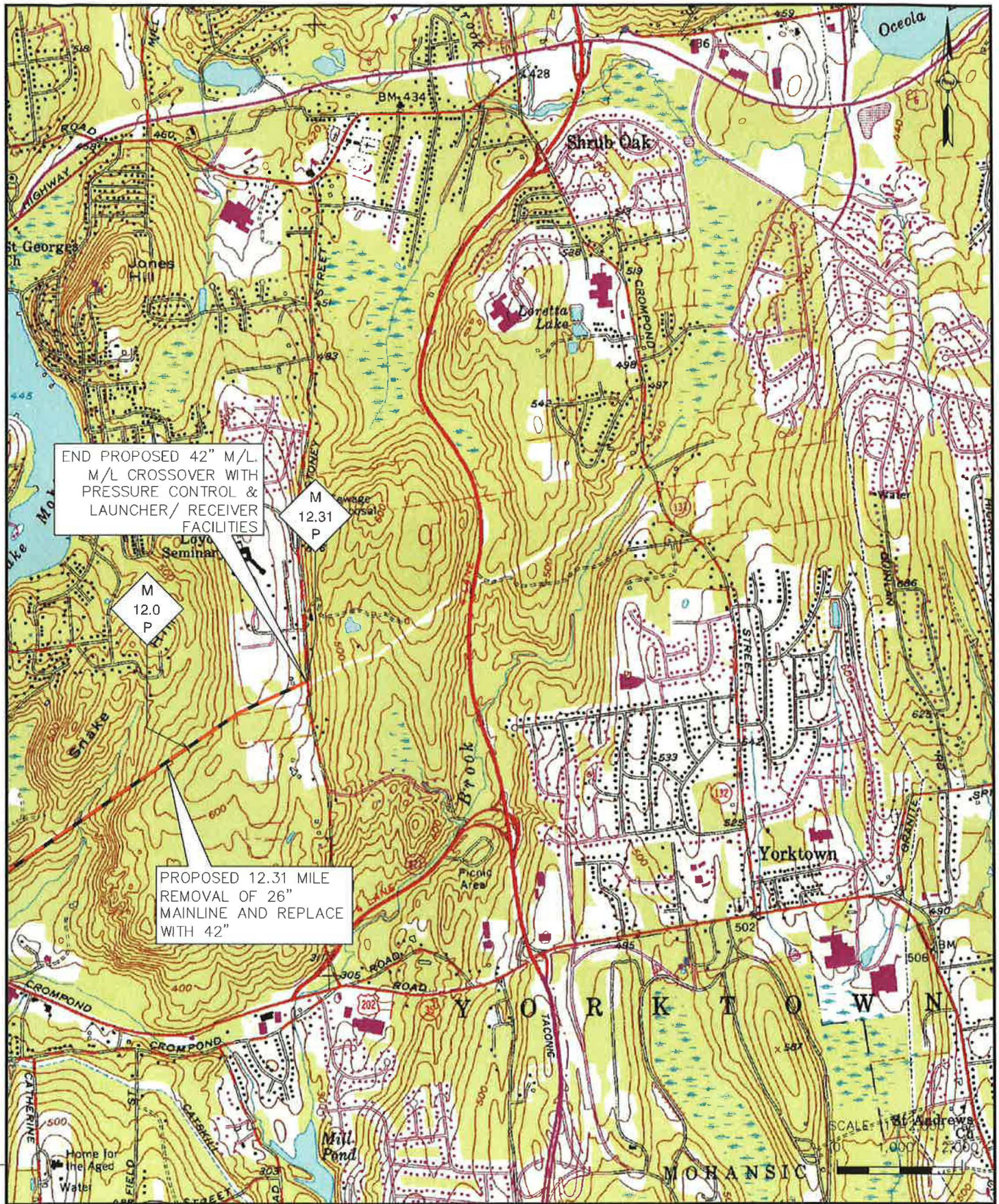
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SHEET 4 OF 5

**Spectra Energy**  
Partners.

Algonquin Gas Transmission, LLC  
5400 Westchase Ct. Houston, TX 77056-3310 713 / 627-5400





END PROPOSED 42" M/L.  
M/L CROSSOVER WITH  
PRESSURE CONTROL &  
LAUNCHER/ RECEIVER  
FACILITIES

M  
12.0  
P

M  
12.31  
P

PROPOSED 12.31 MILE  
REMOVAL OF 26"  
MAINLINE AND REPLACE  
WITH 42"

ALGONQUIN INCREMENTAL MARKET PROJECT			
STONY POINT DISCHARGE - USGS QUAD EXCERPT (STONY POINT - YORKTOWN HEIGHTS, NY)			
LOC.: WESTCHESTER COUNTY, NEW YORK			REV.: M
CKD. BY: JP	ENG.: CCW	DATE: 02/2014	W.O.: 101490
DRN. BY: CLP	SCALE: 1"=2,000'	DWG. NO.: S7-E-6505	SHEET 5 OF 5

**Spectra Energy**  
Partners.

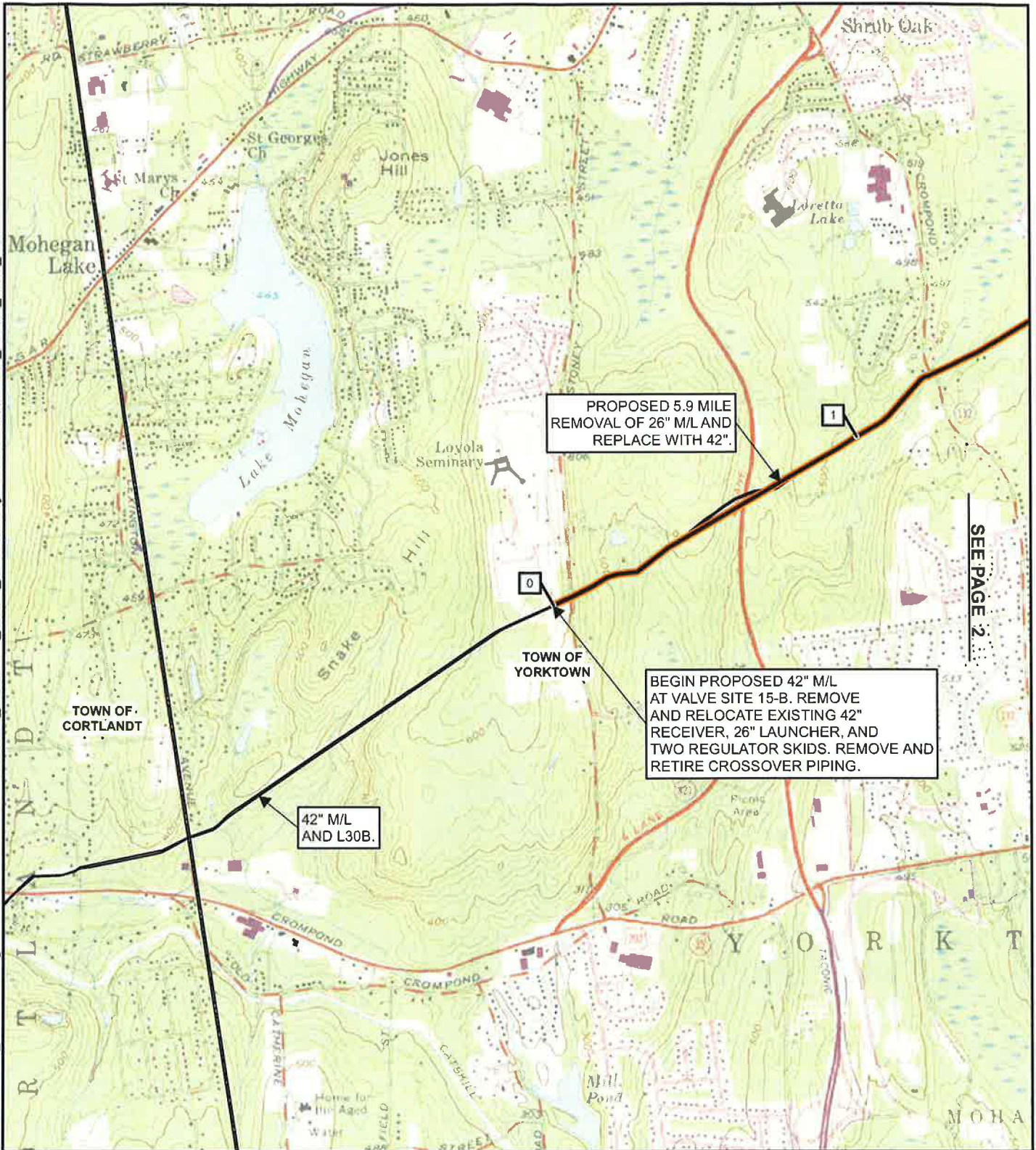
Algonquin Gas Transmission, LLC  
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400



# Exhibit 2: Atlantic Bridge project map

Algonquin Gas Transmission, LLC and Maritimes & Northeast Pipeline, LLC, Atlantic Bridge Project  
Environmental Report, Resource Report 1 – General Project Description, Pre-Filing Draft, FERC Docket  
No. PF 15-12-000 (Mar. 2015), Appendix 1A

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SEE PAGE 2

- 1 MILE POST
- EXISTING METERING AND REGULATING (M&R) STATION MODIFICATION REQUIRED

- PROPOSED PIPELINE
- EXISTING ALGONQUIN GAS TRANSMISSION PIPELINE

- MUNICIPALITY BOUNDARY
- COUNTY BOUNDARY



**TITLE: ATLANTIC BRIDGE PROJECT - STONY POINT TO SOUTHEAST**  
**STONY POINT TAKE-UP AND RELAY - USGS QUAD EXCERPT**  
**(MOHEGAN LAKE, NY - CROTON FALLS, NY)**

**LOC.: WESTCHESTER COUNTY, NEW YORK**

**REV. 0**

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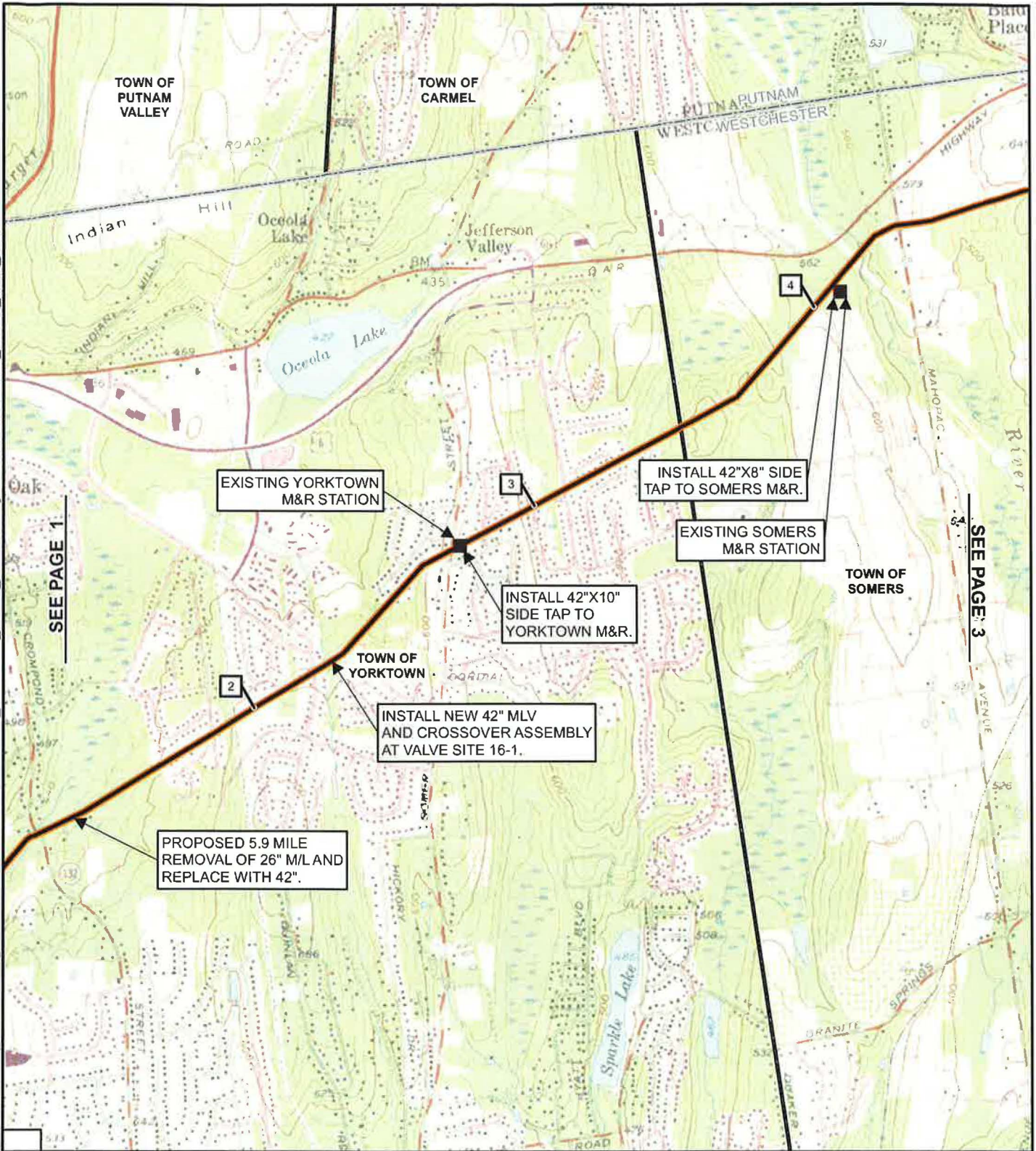
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**Spectra Energy**  
**Partners.**

Algonquin Gas Transmission, LLC  
5100 Westmore Court, Houston, TX 77056-5310 713.627.5400



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- 1 MILE POST
- EXISTING METERING AND REGULATING (M&R) STATION MODIFICATION REQUIRED

PROPOSED PIPELINE

EXISTING ALGONQUIN GAS TRANSMISSION PIPELINE

MUNICIPALITY BOUNDARY

COUNTY BOUNDARY



**TITLE: ATLANTIC BRIDGE PROJECT - STONY POINT TO SOUTHEAST**  
**STONY POINT TAKE-UP AND RELAY - USGS QUAD EXCERPT**  
**(MOHEGAN LAKE, NY - CROTON FALLS, NY)**

LOC.: WESTCHESTER COUNTY, NEW YORK

REV. 0

CKD. BY: HMMHOL ENG. DATE: 03/2015 W.B.S.

DRN. BY: HMMHOL SCALE: 1" = 2000' DWG. NO. STON-E-6502

**Spectra Energy**  
**Partners.**

Algonquin Gas Transmission, LLC  
5400 Westheimer Court, Houston, TX 77056-5310 \*13 623 5400





EXISTING METERING AND  
REGULATING (M&R) STATION  
MODIFICATION REQUIRED

EXISTING ALGONQUIN  
GAS TRANSMISSION PIPELINE



COUNTY BOUNDARY



REV. 0

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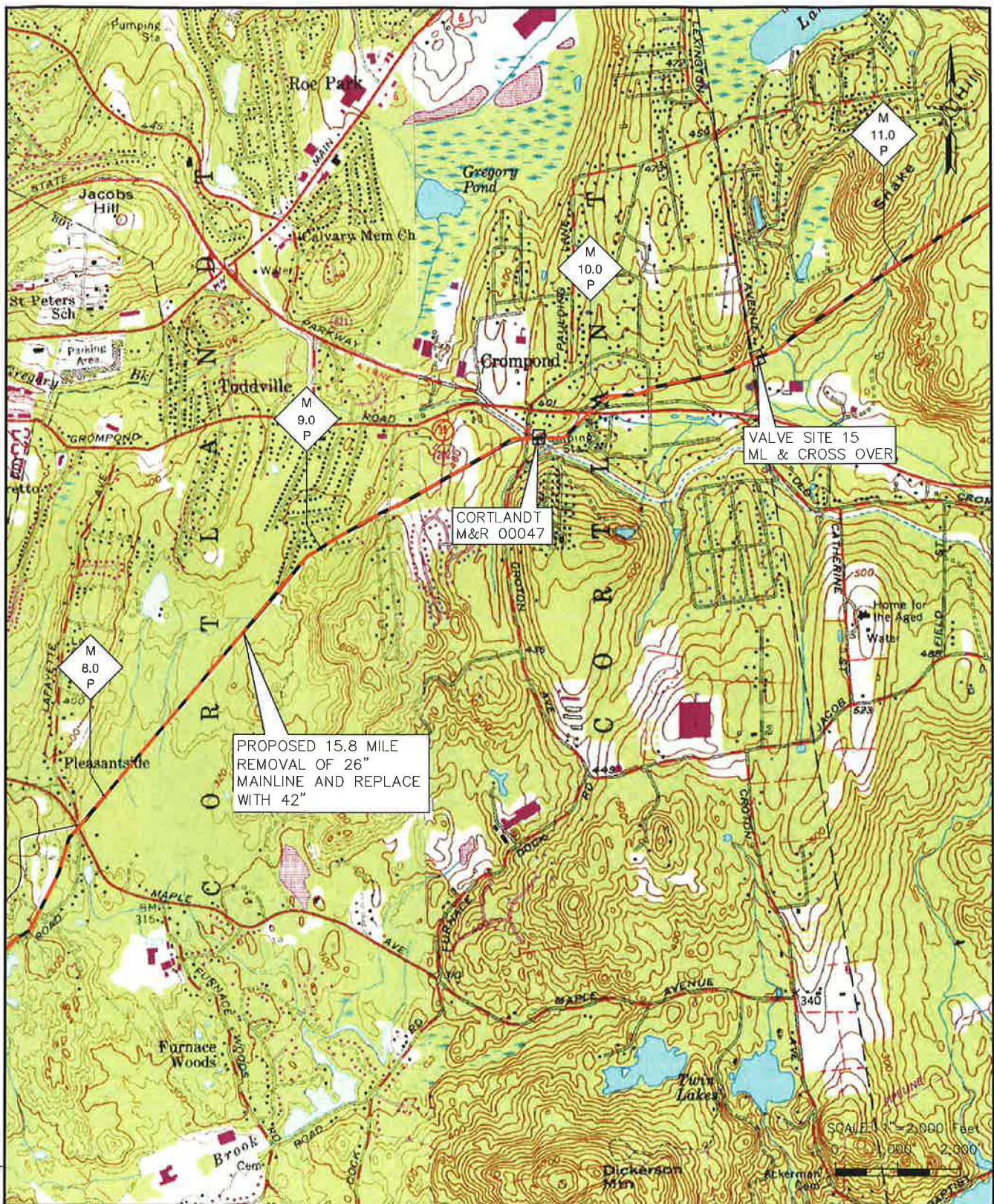
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**Algonquin Gas Transmission, LLC**  
5400 Westheimer Court, Houston, TX 77056-5311 713.627.5400

# Exhibit 3: July 2013 initial AIM project map

Algonquin Gas Transmission, LLC, Algonquin Incremental Market Project Environmental Report,  
Resource Report 1 – General Project Description, Pre-Filing Draft, FERC Docket No. PF 13-16-000 (Jul.  
2013), Appendix 1A





I.C. #

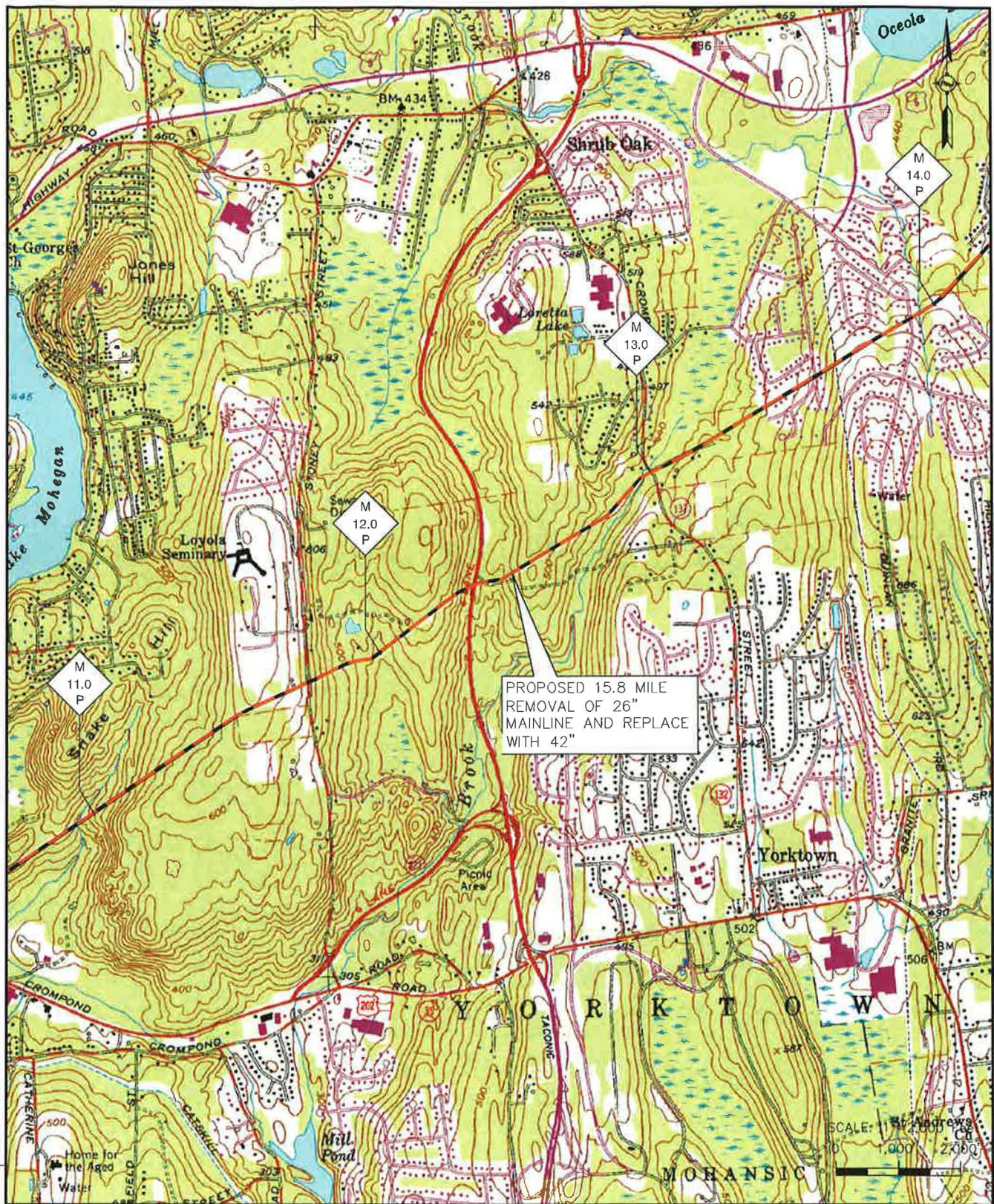
ALGONQUIN INCREMENTAL MARKET PROJECT			
STONY POINT DISCHARGE - USGS QUAD EXCERPT (STONY POINT - SOMERS, NY)			
LOC.: WESTCHESTER COUNTY, NEW YORK			REV.: E
CKD. BY: TWJ	ENG.:	DATE: 7/26/13	W.O.: 101490
DRN. BY: APW	SCALE: 1"=2,000'	DWG. NO.: 6553	SHEET 4 OF 6



Algonquin Gas Transmission, LLC  
5400 Westheimer Cl. Houston, TX 77056-5310 713 / 627-5400



R:\101490 - Spectra AIN\08 Deliverables WIP\04.11 Pipeline\04.11.665 PL Permits\6000 Series - Quad maps\Half scale\2 - Stony point\101490-04-11-665-6554.dwg - PLOT TIME: 7/26/2013 3:51 PM



I.C. #

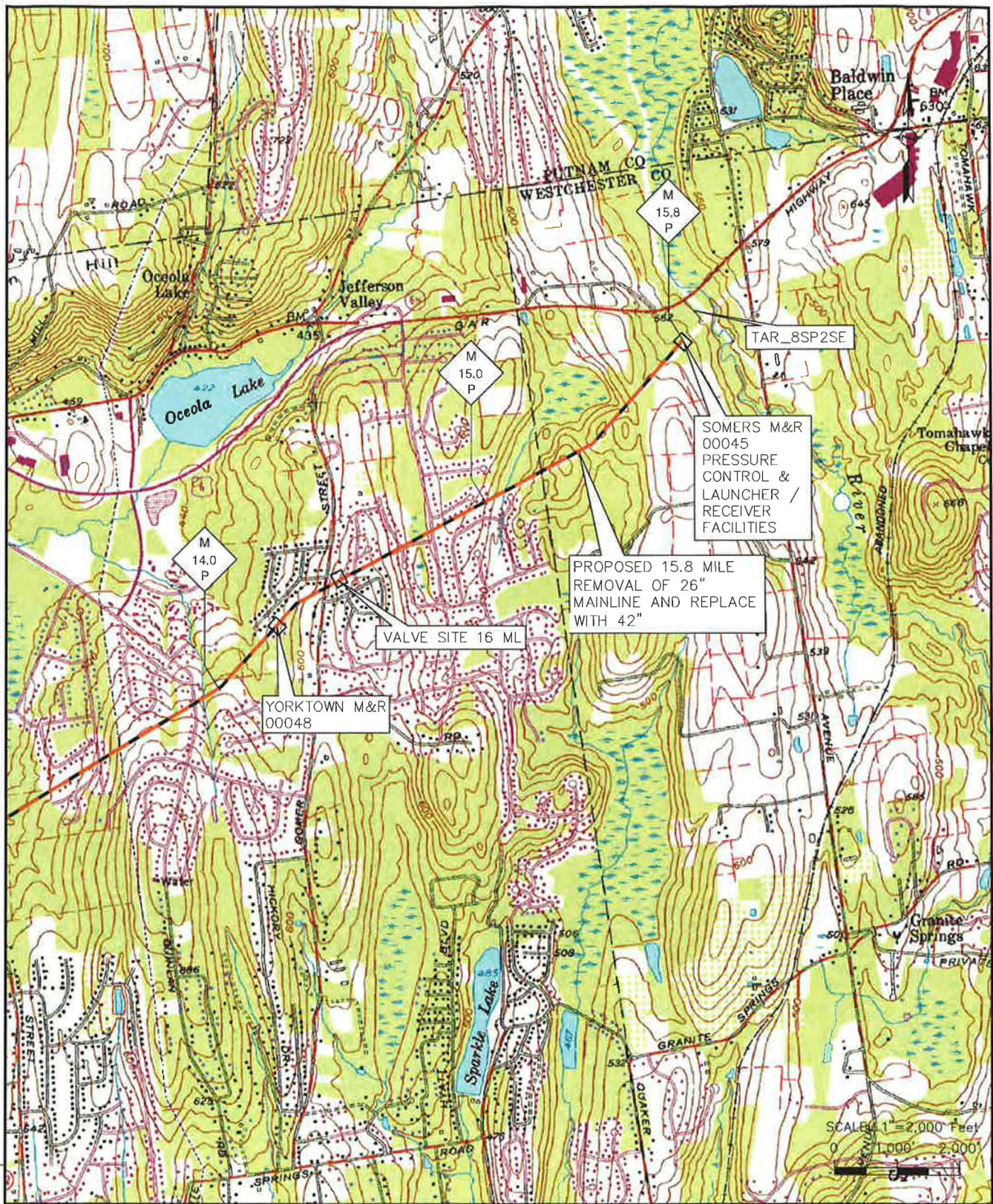
ALGONQUIN INCREMENTAL MARKET PROJECT			
STONY POINT DISCHARGE - USGS QUAD EXCERPT (STONY POINT - SOMERS, NY)			
LOC.: WESTCHESTER COUNTY, NEW YORK			REV.: E
CKD. BY: TWJ	ENG.:	DATE: 7/26/13	W.O.: 101490
DRN. BY: APW	SCALE: 1"=2,000'	DWG. NO.: 6554	SHEET 5 OF 6

**SpectraEnergy**

Algonquin Gas Transmission, LLC  
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400



R:\101490 - Spectra AIM\08 Deliverables WIP\04.11 Pipeline\04.11.665 PL Permits\6000 Series - Quad maps\Half scale\2 - Stony point\101490-04-11-665-6555.dwg - PLOT TIME: 7/26/2013 4:01 PM



I.G. #	ALGONQUIN INCREMENTAL MARKET PROJECT				
	STONY POINT DISCHARGE - USGS QUAD EXCERPT (STONY POINT - SOMERS, NY)				
	LOC.: WESTCHESTER COUNTY, NEW YORK				REV.: E
	CKD. BY: TWJ	ENG.:	DATE: 7/26/13	W.O.: 101490	
	DRN. BY: APW	SCALE: 1"=2,000'	DWG. NO.: 6555	SHEET 6 OF 6	

**Spectra Energy**

Algonquin Gas Transmission, LLC  
5400 Westheimer Ct. Houston, TX 77056-5310 713 / 627-5400



# Exhibit 4: Spectra Energy website, Access Northeast

Spectra Energy, Access Northeast: A New England Energy Reliability Solution, available at:  
<http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Access-Northeast> (last visited Apr. 1, 2015)



## Spectra Energy Corp Headquarters

5400 Westheimer Court  
Houston, TX 77056-5310  
(713) 627-5400

## New Projects and Our Process

Reliable, Affordable Energy for New England's Prosperity



## Access Northeast: A New England Energy Reliability Solution



To learn more about Access Northeast, visit  
[www.AccessNortheastEnergy.com](http://www.AccessNortheastEnergy.com).

**Latest News:** National Grid Joins Eversource Energy and Spectra Energy on Access Northeast; Project Launches Open Season for New England Energy Reliability Solution (Feb. 18, 2015)

New England faces a well-publicized energy challenge. Lack of sufficient energy infrastructure in the region is driving electricity prices higher, limiting economic competitiveness and growth, and straining systems to the point where serious energy reliability issues threaten public safety and security. These challenges will continue until the region's infrastructure constraints are resolved.

### Access Northeast's Solution Is:

#### 1 Timely

Our electric power solution could begin service as early as 2018.

#### 2 Environmentally Responsible

The expansions can occur on our existing footprint to minimize environmental impact and stakeholder disruption.

#### 3 Scalable

The natural gas supply increase will be available in increments.

#### 4 Effective

Access Northeast is already directly connected to ~ 70% of New England's natural gas-fired electric generation, which will provide natural gas to power plants critical for grid stability on the coldest and warmest days.

### Readily Expandable Pipelines

### Related Information

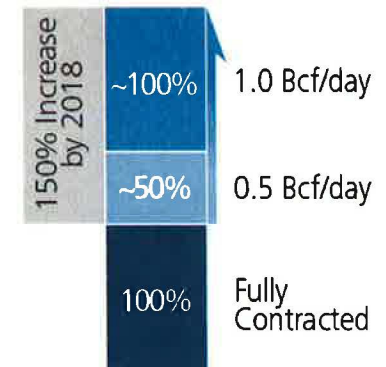
Spectra Energy's Comments to FERC (10/1/14)

Spectra Energy's Maine PUC Filing (9/29/14)

### Pipelines are Full

*New England natural gas supply is limited by lack of pipeline capacity.*

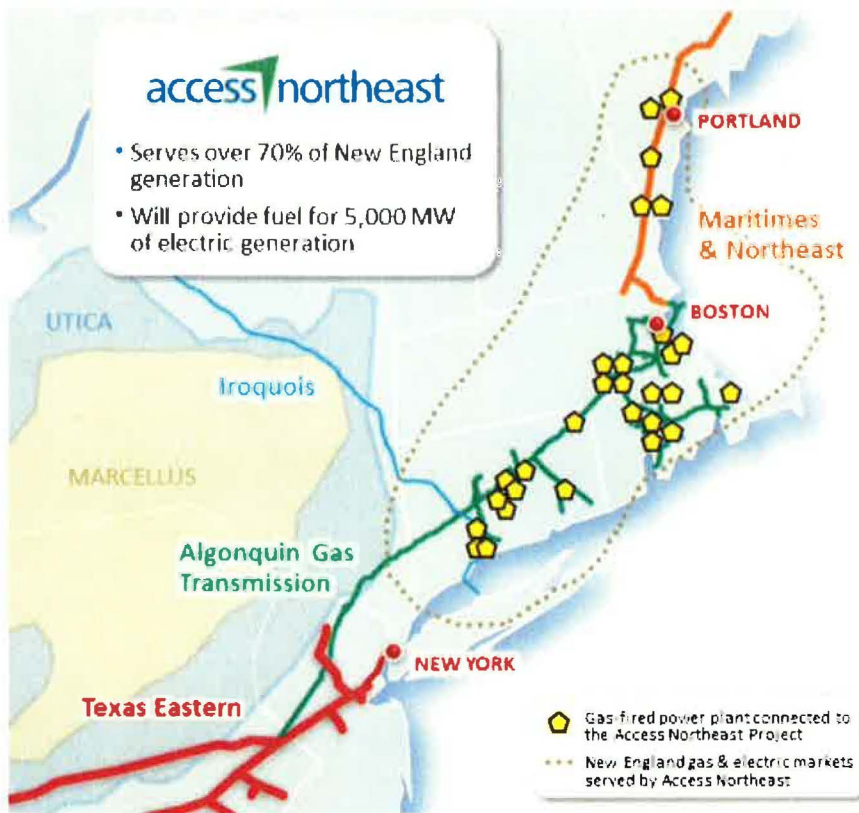
*Algonquin Gas Transmission: West to East Usage and Potential Increased Capacity*



- Current Capacity
- Energy Reliability Solution
- AIM & Atlantic Bridge

### Relevant News

- Oil Plunge Boosts U.S. Natural Gas Imports to 7-Year High (Bloomberg, 1/9/15)
- ISO New England Issues Annual Power System Plan for New England (ISO-NE, 11/6/14)
- Maine Officials Cheer Plan for \$3 Billion Natural Gas Expansion (Maine Public Broadcasting, 9/16/14)



- FERC: ISO-NE Must Address Reliability Concerns (9/9/14)
- New England Spot Natural Gas Prices Hit Record Levels This Winter (EIA, 2/21/14)
- Peak-To-Average Electricity Demand Ratio Rising In New England And Many Other U.S. Regions (EIA, 2/18/14)

### **Presentations**

Spectra Energy's Richard Kruse: Presentation to the Pennsylvania Independent Oil and Gas Association - May 14, 2014

### **Additional Sources of Information**

New England Committee on Electricity (NESCOE)

Independent System Operator New England (ISO-NE)

Federal Energy Regulatory Commission (FERC): New England Electric Power Markets

### **Energy Information Administration (EIA) - New England States:**

Connecticut  
Maine  
Massachusetts  
New Hampshire  
Rhode Island  
Vermont

New England's governors, members of the congressional delegation and other policymakers have placed a high priority on developing a solution. While the details of planning and financing need to be resolved, there is widespread agreement that New England needs additional energy infrastructure.

Access Northeast supports a portfolio of investments to ensure a reliable, diverse and affordable energy supply and to sustain the region's investments in energy efficiency and renewable power. We also understand that additional natural gas supply to the region will be a part of that diverse solution.

### **Natural Gas and Electric Power**

Typically, gas distribution companies, not electric power producers, hold the firm contracts for natural gas flowing into New England. Spectra Energy currently has two projects in development, [Algonquin Incremental Market \(AIM\)](#) and [Atlantic Bridge](#), that will increase natural gas supply for residences and businesses in 2016 and 2017, respectively. For energy reliability, however, the power generators need access to natural gas service during peak demand. The current effort by the region's leaders is critical to making that happen, and thus critical for New England's future security and prosperity. Access Northeast is independent of AIM and Atlantic Bridge.

### **A Key Question**

From our perspective, the fundamental question that must be considered for new natural gas transportation to New England is:

- ***Will the solution include specific capacity to deliver additional natural gas directly to the electric generators?***



If the answer is yes, lower prices and increased energy reliability will follow.

### Preview of Access Northeast's Solution

New England's existing natural gas pipeline infrastructure can be enhanced to: 1) improve power system reliability; 2) make the region more economically competitive by reducing electric costs; and 3) protect New England's quality of life by minimizing environmental and community impacts.

Specifically, Access Northeast proposes expanding Spectra Energy's Algonquin and Maritimes & Northeast systems, pipelines which already directly connect to about 60 percent of New England's natural gas-fired electric generation. Through an alliance with Iroquois Gas Transmission, Access Northeast is connected to more than 70 percent of the region's gas generation. This will provide direct, guaranteed natural gas deliveries to critical power plants that are required for grid stability, especially on peak power demand days.

The pipeline expansions will be available in increments of 200 million cubic feet per day (cf/d), up to 1 billion cf/d (1.5 billion cf/d including AIM and Atlantic Bridge), and could be in service as early as November 2018. Importantly, the expansions can occur on our existing footprint to minimize environmental impact and stakeholder disruption. This solution will be timely, environmentally responsible, scalable and effective.

Click below for more information about the project:

- [Draft Tariff for Energy Reliability Service \(ERS\)](#) (pdf, 301 KB)



*Watch Spectra Energy's President of U.S. Transmission and Storage, Bill Yardley, discuss the company's expansion plans to help the New England region increase its natural gas pipeline capacity.*

### For more information:

#### General

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#### Business Development

Greg Crisp - [gncrisp@spectraenergy.com](mailto:gncrisp@spectraenergy.com)

**Government Officials**

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Marylee Hanley - [mhanley@spectraenergy.com](mailto:mhanley@spectraenergy.com) (NH, ME)

Steve Tillman - [setillman@spectraenergy.com](mailto:setillman@spectraenergy.com) (Federal)

**Media**

Phil West - [prwest@spectraenergy.com](mailto:prwest@spectraenergy.com)



> [Operations](#) > [New Projects and Our Process](#) > [New Projects in U.S.](#) > [Access Northeast](#)



# Exhibit 5: Access Northeast website, FAQs

Access Northeast, FAQs: About Access Northeast, available at:  
<http://accessnortheastenergy.com/faqs/faq-about-access-northeast> (last visited Apr. 1, 2015)



(<http://accessnortheastenergy.com/>)

## FAQs

About Access Northeast (<http://accessnortheastenergy.com/faqs/faq-about-access-northeast/>)

Operations & Safety (<http://accessnortheastenergy.com/faqs/faq-operations-safety/>)

The Access Northeast Map (<http://accessnortheastenergy.com/faqs/the-access-northeast-map/>)

## News

News Releases (<http://accessnortheastenergy.com/category/news-releases/>)

Relevant News (<http://accessnortheastenergy.com/category/relevant-news/>)

## About Access Northeast

Why is this project important?

What is the timeline of this project?

After we receive expressions of interest – due May 1 – we will finalize the scope of the project and plan to pre-file with FERC late in 2015 and file our FERC 7c application in 2016. We would expect to receive and accept the FERC certificate in 2017, which would allow service to come on line in 2018. It's important to note that the expansion on Algonquin and Maritimes existing facilities will be within existing rights-of-way while having minimal environmental and community impact. Achieving this schedule requires regulators, and state and federal policy makers to act expeditiously.

What is the expected cost?

How much additional natural gas will this provide?

Would this project allow all merchant gas generation in New England to operate, even on the coldest winter days?

How much of this expansion will be on existing infrastructure versus new construction?

How does this accommodate renewable energy?

What is the project path?

How will this impact AIM & Atlantic Bridge Projects?

Have you discussed this project with state government leaders? What was their reaction?

What regulatory approvals are required?

About	Energy for You	News	FAQs
Access Northeast (http://accessnortheastenergy.com/about-us/access-northeast/)	Energy for You (http://accessnortheastenergy.com/energy-for-you/)	News Releases (http://accessnortheastenergy.com/category/news-releases/)	About Access Northeast (http://accessnortheastenergy.com/faqs/faq-about-access-northeast/)
Eversource Energy (http://accessnortheastenergy.com/about-us/eversource-energy/)		Relevant News (http://accessnortheastenergy.com/category/relevant-news/)	Operations & Safety (http://accessnortheastenergy.com/faqs/faq-operations-safety/)
National Grid (http://accessnortheastenergy.com/about-us/national-grid/)			Map (http://accessnortheastenergy.com/faqs/the-access-northeast-map/)
Spectra Energy (http://accessnortheastenergy.com/about-us/spectra-energy/)			



(http://accessnortheastenergy.com/)

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(<http://accessnortheastenergy.com/>)

## FAQs

About Access Northeast (<http://accessnortheastenergy.com/faqs/faq-about-access-northeast/>)

Operations & Safety (<http://accessnortheastenergy.com/faqs/faq-operations-safety/>)

The Access Northeast Map (<http://accessnortheastenergy.com/faqs/the-access-northeast-map/>)

## News

News Releases (<http://accessnortheastenergy.com/category/news-releases/>)

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Why is this project important?

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How much additional natural gas will this provide?

Would this project allow all merchant gas generation in New England to operate, even on the coldest winter days?

How much of this expansion will be on existing infrastructure versus new construction?

How does this accommodate renewable energy?

What is the project path?

How will this impact AIM & Atlantic Bridge Projects?

Access Northeast is independent from Spectra Energy's previously announced Algonquin Incremental Market (AIM) and Atlantic Bridge projects. AIM and Atlantic Bridge are separate and independent projects. Spectra Energy's AIM expansion project will begin to de-bottleneck the pipeline system by winter of 2016, helping to enhance reliability and reduce natural gas price volatility in New England. AIM is underpinned by long-term commitments from gas utility companies across southern New England. Atlantic Bridge's proposed in-service date is November 2017, and it will be similarly supported by gas

utilities.

Have you discussed this project with state government leaders? What was their reaction?

What regulatory approvals are required?

About	Energy for You	News	FAQs
Access Northeast (http://accessnortheastenergy.com/about-us/access-northeast/)	Energy for You (http://accessnortheastenergy.com/energy-for-you/)	News Releases (http://accessnortheastenergy.com/category/news-releases/)	About Access Northeast (http://accessnortheastenergy.com/faqs/faq-about-access-northeast/)
Eversource Energy (http://accessnortheastenergy.com/about-us/eversource-energy/)		Relevant News (http://accessnortheastenergy.com/category/relevant-news/)	Operations & Safety (http://accessnortheastenergy.com/faqs/faq-operations-safety/)
National Grid (http://accessnortheastenergy.com/about-us/national-grid/)			Map (http://accessnortheastenergy.com/faqs/the-access-northeast-map/)
Spectra Energy (http://accessnortheastenergy.com/about-us/spectra-energy/)			



(http://accessnortheastenergy.com/)  
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## **CERTIFICATE OF SERVICE**

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at White Plains, NY this 2<sup>nd</sup> day of April, 2015.

A handwritten signature in cursive script that reads "Misti Duvall".

---

Misti Duvall  
Staff Attorney  
Riverkeeper, Inc.

**BEFORE THE UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

**Algonquin Gas Transmission LLC        )        Docket No. CP14-96**

**PETITION FOR REHEARING OF COALITION OF ENVIRONMENTAL AND  
COMMUNITY ORGANIZATIONS, IMPACTED LANDOWNERS AND  
MUNICIPALITIES FOR REHEARING, OR IN THE ALTERNATIVE,  
RECONSIDERATION OF ORDER ISSUING CERTIFICATE FOR ALGONQUIN  
INCREMENTAL MARKET (AIM) PROJECT**

**I.        OVERVIEW AND CONCISE STATEMENT OF ERROR**

Pursuant to the Natural Gas Act, 15 U.S.C. §717r(a) and Rule 713 of the Commission's Rules of Practice and Procedure, an informal and unincorporated coalition of environmental and community organizations, and impacted landowners and municipalities in New York, Rhode Island and Massachusetts<sup>1</sup> hereby file this timely request for rehearing of the Federal Energy Regulatory Commission's March 3, 2015 decision issuing a certificate to Algonquin Gas Transmission, LLC (Algonquin) pursuant to Section 7 (c) of the Natural Gas Act to construct and operate the Algonquin Incremental Market (AIM) Project, consisting of approximately 37.4 miles of pipeline and related facilities in New York, Connecticut and Massachusetts, and an additional 81,620 horsepower of compression at sites in New York, Connecticut and Rhode Island.<sup>2</sup> Located in close proximity to a nuclear power plant and an active quarry, the AIM project will endanger millions of residents in surrounding communities while forcing them to absorb the added burden of higher property insurance and diminished property values. The AIM pipeline segment – which runs through wetlands, streams, parkland

---

<sup>1</sup> Further description of the Intervenor is provided in Part III, *infra* and listed in the table attached as Exhibit 1.

<sup>2</sup> *Algonquin Gas Transmission LLC, Order Issuing Certificate and Approving Abandonment*, 150 FERC ¶61,163 (March 3, 2015) (“Certificate Order”)

and heavily forested terrain – will remove large swaths of trees and destroy habitat and recreational areas, while the six compressor station expansions will release toxic emissions and degrade regional air quality. Moreover, the Commission sanctioned these harms based on an incomplete record -- devoid of meaningful public participation required by the National Environmental Policy Act (NEPA) or outreach to lower income or minority communities, and lacking necessary state authorizations such as a Section 401 water quality certificate.

Compounding these errors, the Commission evaluated the AIM project as a stand-alone capacity expansion rather than as the gateway piece of a comprehensive infrastructure build-out comprised of two other geographically, functionally and temporally connected segments – the Atlantic Bridge and Northeast Access Project – which together span the East Coast from New York through Maine, transporting shale gas to the Northeast and eventually markets overseas. By failing to consider the entire project as a whole, or at least evaluate the cumulative impacts associated with these related developments, the Commission concealed the project’s environmental significance and failed to adequately analyze its environmental impacts, in violation of the National Environmental Policy Act.

For all of these reasons, the Commission’s Certificate Order is arbitrary and capricious, unsupported by substantial evidence and inconsistent with the “present or future public convenience and necessity” under the Natural Gas Act. Accordingly, the Commission must grant the Coalition’s request for rehearing. In addition, the Coalition urges the Commission to stay the certificate, or at least, Algonquin’s ability to commence tree removal or ground-breaking activity or invoke eminent domain until this rehearing request has been resolved.

## II. STATEMENT OF ISSUES



**Issue No. 1: Did the Commission's segmentation of review of the AIM project from the Atlantic Bridge Project PF15-12 violate (a) the National Environmental Policy Act, 42 U.S.C. § 4321 *et. seq.* and CEQ regulations by failing to consider geographically, functionally, temporally connected and dependent project units, (b) the public interest standard of Section 7 of the Natural Gas Act, 15 U.S.C. § 717f, by ignoring the impact of imminent future development on the public necessity and convenience of the AIM project and (c) the Commission's Certificate Policy Statement under which the Commission must find a need for the project.**

Yes. The Commission violated NEPA and the CEQ regulations by segmenting review of the AIM project from the Atlantic Bridge Project, in light of record evidence – including common Project sponsors and customers, similar development timelines, overbuild of AIM facilities in anticipation of future expansion and the New York DEC's decision to treat the projects as a single unit which demonstrate a geographic, functional, temporal and interdependent relationship between the projects. Accordingly, the Commission should have treated the projects as a single unit for environmental review under *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304 (D.C. Cir. 2014).

Second, the Commission's failure to take into account the impact of the Atlantic Bridge Project on its evaluation of the public convenience and necessity of the AIM Project violates the Natural Gas Act and the requirement that the Commission consider the impact that future expansion may have for the cost or need of the immediate proposal. *City of Pittsburgh v. FPA*, 237 F.2d 741 (D.C. Cir. 1955).

Segmentation of the project is also incompatible with Commission's Certificate Policy Statement, *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶61,227 (1999) which requires the Commission to find a need for the project, and discourages overbuilding and duplication of facilities. Without a big picture view of the

project as a whole, the Commission could not make the required findings under the *Certificate Policy Statement*.

**Issue No. 2: Did the Commission violate the Clean Water Act, 33 U.S.C §1341(a)(1) (Section 401) by granting the certificate under the Natural Gas Act before several state agencies issued a Section 401 water quality certificate?**

Yes. Section 401 of the Clean Water Act, 33 USC § 1341 makes state certification of compliance with water quality standards a condition precedent to grant of any federal license. As of March 2, 2015, the date the Certificate Order issued, New York, Massachusetts and Connecticut had not yet acted on Algonquin's respective applications for a water quality certificate. For that reason, the certificate must be vacated. *See City of Tacoma v. FERC*, 460 F.3d 53, 68 (D.C. Cir. 2006) (holding that "without a required [401 certification], FERC lacks authority to issue a license"), *S.D. Warren Co. v. Mn. Bd. Of Env'tl. Prot.*, 547 U.S. 370, 374 (2006) (preserving state authority to issue water quality license for federal project).

**Issue No. 3: Did the Commission violate NEPA, CEQ regulations and EPA guidance by failing to consider the cumulative impacts of (a) reasonably foreseeable infrastructure, such as the addition of the Access Northeast Project; (b) Marcellus Shale development ; (c) greenhouse gas and climate change and (d) methane emissions and radon associated with the compressor station upgrades, pigging stations and other project facilities?**

Yes. Under NEPA and the CEQ regulations, the Commission must consider cumulative impacts of reasonably foreseeable projects. Failure to do so is grounds for reversal. *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1307 (D.C.Cir.2014) (vacating Commission order based on conclusory statements dismissing cumulative impacts). Moreover, while the Commission requires demonstration of a causal connection between

pipeline facilities and Marcellus Shale development, the facts here -- including Algonquin's admission that one purpose of the project is to transport shale gas as well as overbuild (which will drive additional shale development) -- are proof of such a causal connection. *Central New York Oil and Gas Co*, 137 FERC ¶61,121 (2011), *reh'g. denied*, 138 FERC ¶61,104 (2012), *aff'd sub nom. Coalition for Responsible Growth and Resource Conservation v. FERC*, Docket No. 12-566 (2nd Cir. 2012) (CYNOC). (finding no causal connection between pipeline and shale extraction under facts of this case). Moreover, as EPA pointed out in its comments dated March 2, 2015 the Commission improperly eliminated consideration of fracking impacts from the DEIS based on an artificial – and unsupported – ten mile limit.

The CEQ's recent guidance document on greenhouse gas emissions further reinforces the Commission's obligation to consider the cumulative impacts of Marcellus Shale Production. Specifically, CEQ directs agencies to take into account emissions from activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for the agency action (often referred to as upstream emissions) and as a consequence of the agency action (often referred to as downstream emissions) should be accounted for in the NEPA analysis. Finally, cumulative impacts of methane and radon must also be considered, a point also raised by the EPA Comments. *Id.*

**Issue No. 4: Given alternatives such as remediating pipeline leakage, or relying on renewables combined with predictions of declining demand for gas -- did the Commission fail to demonstrate a need for the project as required by the Certificate Policy Statement?**

Yes. The Certificate Policy Statement requires the Commission to determine a need for a specific pipeline in order to issue a certificate. Here, there is no need for this

particular project in light of reports of declining demand for gas and the logical alternatives that the Commission completely ignored, such renewable resources or remediation of gas leakage – a process which could increase efficiency and gas delivery. *See also* Notice of Proposed Policy on Cost Recovery Mechanisms for Modernization of Natural Gas Facilities, 140 FERC ¶61,147 (2014) (offering rate incentives to pipelines that choose to identify and repair these leaks to increase efficiencies).

**Issue No. 5a: Did the Commission violate NEPA by failing to provide meaningful opportunity to comment on unavailable environmental submissions?**

Yes. As Exhibit 6 shows, even though the deadline for comment on the Draft Environmental Impact Statement (DEIS) was established as September 29, 2014, Algonquin continued to supplement the record well beyond that date, and even past the January 23, 2015 issue date of the Final Environmental Impact Statement (FEIS).

**Issue No. 5b: Did the Commission violate NEPA by failing to review and analyze significant air and significant water issues and impermissibly delegating review to state agencies, such as the New York State Department of Environmental Conservation?**

Yes. Instead of analyzing and assessing Clean Air Act and Clean Water Act issues, FERC decided - impermissibly and illegally - to delegate decisions to the New York State Department of Environmental Conservation's permits review. *See also Idaho v. ICC*, 35 F.3d 585 595 (DC Cir 1994) (holding that reliance on judgment of other agencies is in fundamental conflict with purpose of NEPA).

**Issue No. 6: Does Environmental Condition 16 violate NEPA by failing to explicitly require the preparation of supplemental environmental review in the event that an alternative method of crossing the waterbody is needed?**

Yes. NEPA and the CEQ regulations require the preparation of a Supplemental Environmental Impact Statement (“SEIS”) whenever: “(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c)(1). Here, the Commission’s Environmental Condition 16 addresses the possibility that an alternative method of crossing the body will be necessary and requires the submission of an “alternative crossing plan” before construction. Certificate Order at 61. However, the Condition does not explicitly require environmental review to analyze the potential environmental impacts of the plan. This omission violates NEPA. The EIS considered only the HDD method, which has environmental impacts that differ from other waterbody crossing methods that could be employed if HDD is unsuccessful. FEIS at 2-36. As a result, if Algonquin proposes the use of an alternative crossing method, or proposes to attempt an HDD crossing at a different location, NEPA requires FERC to prepare an Environmental Assessment to determine whether that proposed change constitutes a “substantial change[] in the proposed action that [is] relevant to environmental concerns” and, if it does, to prepare an SEIS. Environmental Condition 16 therefore be revised to require Algonquin and FERC to comply with these environmental review procedures in the event that a failed attempt at the Hudson River crossing requires changes in the project.

**Issue No. 7: In concluding that the AIM project will not result in increased safety impacts at the Indian Point nuclear facility, did the Commission (a) fail to address expert testimony as required by the CEQ regulations; (b) fail to support its findings with substantial evidence and (c) notwithstanding its obligation to make findings regarding safety, improperly and prematurely rely on inconclusive safety findings by**

**the Nuclear Regulatory Commission, which are still evolving?**

Yes. Section 1502.24 of the CEQ regulations require an agency to insure the professional integrity of the EIS, which among other things, demands a response to expert input, which the Commission failed to do. *See, e.g., Western Watersheds v. Kraayenbrink*, 632 F.3d 472, 492 (9th Cir. 2010). In addition, Section 717r of the Natural Gas Act requires the Commission to support its findings with substantial evidence. Here, the Commission's conclusions regarding safety, a critical issue, lack substantial evidence and cannot be sustained. *Washington Gas Light v. FERC*, 532 F.3d 928 (D.C. Cir. 2008) (remanding Commission order where substantial evidence does not support conclusion that safety concerns can be addressed before project's in-service date). Nor can the Commission pass the buck, and claim reliance on NRC's similarly unsupported findings to satisfy its obligations under the Natural Gas Act. *See Bangor Hydro v. FERC*, 78 F.3d 659 (D.C. Cir. 1996) (vacating Commission decision requiring licensee to comply with Department of Interior fishway prescriptions lacking in evidentiary support). Finally, even after the Commission's decision, facts continue to emerge that cast doubt on the NRC's initial findings. Because evidence in the record, as well as previously unavailable evidence submitted as part of this rehearing request cast significant doubt on the safety of Indian Point given the proximity of the pipeline, the Commission's order presents too great a safety hazard to satisfy the public interest. Accordingly, the Commission must reverse its order, and continue to consider information that casts doubt on the NRC's conclusions.

**Issue No. 8: In concluding, under Environmental Justice requirements, that the AIM project fulfilled its community involvement obligations and will not result in any disproportionately high or adverse environmental and human health impacts on**

**minority or low-income communities, or Indian tribes, did the Commission fails to support its finding with substantial evidence?**

Yes. The absence of any meaningful notice deprived the public of an opportunity to comment. The absence of and meaningful analysis of the AIM Project's impact on population health and other environmental justice issues failed to provide the requisite "hard look" at the proposed pipeline's impact on minority populations. A full analysis of alternative routes and the differential health impacts needs to be provided as part of a rehearing process.

**Issue No. 9: Did the Commission fail to support various findings with substantial evidence including its finding that (a) the compressor stations will not adversely impact air quality, (b) the project will not diminish property values or increase the cost of homeowners' insurance [other catchalls]**

Under Section 717r(a) of the Natural Gas Act, the Commission must support factual findings with substantial evidence. Here, the Commission's conclusions that the project will not adversely impact air quality or property values are unsupported by substantial evidence in the record and as such, cannot be sustained.

**Issue No. 10 - Is the Commission Barred From Conferring Eminent Domain Powers on Algonquin Regarding New York Parkland Until a Full Environmental Review has been Completed?**

Yes. The Commission failed to address many environmental issues related to New York Parkland, which makes it impossible to estimate damages or value of the property for purposes of just compensation and eminent domain. As such, the Commission should not allow the exercise of eminent domain?

**Issue No. 11 – Did the Commission err by failing to hold a hearing to resolve disputed**

**issues of material fact?**

Yes. The Commission must hold a hearing to resolve disputed issues of material fact. *Cajun Electric v. FERC*, 298 F.3d 173, 177 (D.C. Cir. 1994). Here, the record overflows with issues of materials fact, ranging from whether AIM will support gas export to whether the project is overbuilt to dozens of disputes over the extent of environmental harm.

**Issue No. 12: the certificate, or at a minimum, prohibit all tree-removal and ground-breaking activity, and use of eminent domain pending resolution of all pending petitions for rehearing, and issuance of required state permits?**

Yes. Irreparable harm –such as taking of property, destruction of trees, wetlands and habitat – will result if Algonquin is allowed to move forward with the project pending the Commissions resolution of this petition for rehearing, and issuance of a water quality certificate by New York DEC. A stay will preserve the status quo and therefore, is in the interest of justice. *Virginia Petroleum Jobbers v. FERC*, 259 F.2d 921 (D.C. Cir. 1958) (listing factors considered in issuance of stay, including whether absence of stay will preclude future relief).

### **III. THE PARTIES**

The AIM project spans four states – New York, Connecticut, Rhode Island and Massachusetts, impacting hundreds of communities and millions of residents along the way. Not surprisingly, the Certificate Proceeding attracted approximately 50 intervenors. Now, more than half of these intervenors seek rehearing, in their respective individual capacity as well as part of an informal, unaffiliated coalition organized to raise common challenges to the Commission’s Certificate Order.

Under Section 717r(a) of the Natural Gas Act, parties aggrieved by a Commission Order may seek rehearing. Here, all of the organizations, municipalities and



individuals joining in this petition for rehearing are parties, having been granted intervention, and are aggrieved for the reasons described in their respective motions to intervene. The parties joining this petition include: the Community Watersheds Clean Water Coalition, Jessica Porter, Sierra Club Lower Hudson Chapter, Food & Water Watch, Stop the Algonquin Pipeline Expansion (SAPE), Better Future Project, Capitalism versus the Climate, Fossil Free Rhode Island, Phil Barden, Eunice Carlas, Paul Dunn, Margaret Sheehan, Paul McIrney, Marla Rivera, Jan White, Mary McMahon, Robert and Audrey Brait, Dan McCann, William and Robin Cullinane, Linder Sweeney, Walter Partridge, Reynolds Hill, Inc. Keep Yorktown Safe, New York, City of Peekskill, New York, Pramilla Malick, Paul Nevins and Rickie Harvey.<sup>3</sup> In addition to joining this petition, some of the intervenors have filed separate rehearing requests to address specific issues unique to their interests.

#### **IV. FACTUAL BACKGROUND**

##### **A. Algonquin's Application for the AIM Project**


On February 28, 2014, Algonquin filed its application to construct the AIM Project. The project is comprised of 37.4 miles of pipeline and related facilities in New York, Connecticut and Massachusetts, as well as the addition of 81,620 horsepower of compression at six stations in New York, Connecticut and Rhode Island. Certificate Order P.4 –P.5. According to Algonquin, the AIM project will provide 342,000 dekatherms (Dth) per day of firm transportation service from an existing recipient point in Ramapo, New York to various points in New England.

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<sup>3</sup> A full description of each party's interest is set forth in Exhibit 1, attached.

At the time that Algonquin filed its AIM application, planning for the Atlantic Bridge was already underway, with an open season launched on February 4, 2014.<sup>4</sup> Like the AIM Project, the Atlantic Bridge Project would also provide shippers with an opportunity to obtain firm transportation from Ramapo to delivery to New England. In fact, Spectra, Algonquin's corporate parent, described the Atlantic Bridge project as an "extension of the AIM concept."

### Algonquin Incremental Market Expansion




**Compliments of Spectra Energy**

5

### Spectra - Atlantic Bridge

- Extension of AIM concept.
- Unitil Precedent Agreement for 100 MMscf per day.
- Potential 300 MMscf per day.
- In-Service 2H 2017



**Atlantic Bridge Open Season**

6

The Atlantic Bridge Open Season closed on March 31, 2014. Four months later, by letter dated June 2014, Spectra outlined for the New England States Committee on Electricity (NESCOE) its Atlantic Bridge expansion plans,<sup>5</sup> and on July 1, 2014, formally announced the Access Northeast pipeline which would "complete the AIM/ Atlantic

<sup>4</sup> Spectra Open Season Announcement for Atlantic Bridge Project, online at <http://www.spectraenergy.com/content/documents/Projects/Atlantic-Bridge-Open-Season.pdf>; see also Exhibit 2, Timeline of Spectra's development of Northeast infrastructure.

<sup>5</sup>Spectra Letter to NESCOE (June 27, 2014), online at [http://www.nescoe.com/uploads/Spectra\\_EnhancingElectricReliabilityinNE\\_27Jun2014.pdf](http://www.nescoe.com/uploads/Spectra_EnhancingElectricReliabilityinNE_27Jun2014.pdf); See also Exhibit 2 (Table of Spectra Development).

Bridge.”<sup>6</sup> As shown on the slide below, gas from Marcellus entering the system would flow north via AIM and Atlantic Bridge, eventually making its way through Northeast Access and into Canada for export via an LNG terminal.



By the time the Commission released the draft EIS on August 12, 2014, it was apparent that the AIM project was merely the first piece of a far larger and more expansive project than described in Algonquin’s application. Indeed, by September 2014, Spectra was already marketing all three projects in a proposal to the Maine Public Utilities Commission.<sup>7</sup>

<sup>6</sup> See Exhibit 2, Timeline; also *Spectra Atlantic Project to Pipe Marcellus to New England* (January 2015).

<sup>7</sup> See Spectra Proposal submitted to Maine Public Utilities Commission (September 29, 2014), online at

## B. Environmental Review

Meanwhile, having hastily filed the AIM application in February 2014, presumably to avoid overlapping with the Atlantic Bridge and Northeast Access projects, not surprisingly, Algonquin's application was woefully incomplete – particularly for a project that had gone through a six-month pre-filing process. Over the next six months, Algonquin responded to several staff requests for additional information and submitted supplemental filings once or twice a month, up until the Commission's notice of a Draft Environmental Impact Statement ("DEIS") released on August 12, 2014. Certificate Order ¶ 53. During this February to August 2014 time frame, Algonquin did not take steps to amend its certificate application for the AIM project to include both Atlantic Bridge and Northeast Access projects, even though, by this time, it was known that they would be developed.

Like Algonquin's project application, the DEIS was riddled with data gaps.<sup>8</sup> For some of the missing information, the Commission allowed Algonquin to file it after the September 29, 2014 deadline for comments on the DEIS, thus depriving parties of a

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[http://www.spectraenergy.com/content/documents/Projects/NewEngland/Maine\\_Public\\_Uilities\\_Commission\\_Proposal\\_FINAL.pdf](http://www.spectraenergy.com/content/documents/Projects/NewEngland/Maine_Public_Uilities_Commission_Proposal_FINAL.pdf).

<sup>8</sup> As described in SAPE's letter of September 29, 2014, gaps included (1) insufficient analysis of impacts to vernal pools in New York (Section 4.4.3.2); (2) Non-saturated wetlands not identified (Section 4.4.4); (3) Compensatory Mitigation Plan not prepared (Section 4.4.5); (5) Tree survey of Harriman State Park not complete (Section 4.6.1.5); (6) Alternatives for the Hudson River crossing not prepared (Section 4.4.3); (7) Final plans for the Catskill Aqueduct crossing not developed (Section 4.3.2.1); (8) Plans for to address trench dewatering not developed (Section 4.3.2.6); (9) Survey for the presence of the Indiana bat not complete (Section 4.7.1.2); (10) Survey for the presence of the northern long-eared bat not complete (Section 4.7.1.3); (11) Incomplete information on impacts to migratory birds (Section 4.7.2); (12) Incomplete information on impact to bald eagles (Section 4.7.3); (13) Survey for the presence of Timber Rattlesnakes not complete (Section 4.7.5.1); and (14) NYSDOS approval of consistency assessment for Hudson Crossing (Section 4.8.4.1).

meaningful opportunity to participate. In fact, as Exhibit 6 shows, the bulk of Algonquin's submissions were made *after* the DEIS comment deadline leading commenters to ask the Commission to prepare a supplemental DEIS (which the Commission refused to do). Notwithstanding the minimal evidence in the record, the DEIS concluded that the project -- if constructed and operated in accordance with staff's recommended conditions, and yet-to-be-issued state water and air quality permits -- would not have significant environmental impacts.

On January 23, 2015, the FEIS was released, reaching largely the same conclusions as the DEIS, still without adequate information, and based on assumptions that Algonquin would incorporate the measures required in state water quality certificates. *See, e.g.*, FEIS at 5-6; *see also* Certificate Order P. 73. The FEIS also found that the AIM project was not improperly segmented because it had stand-alone value to meet the needs of precedent customers and because Algonquin had not yet filed applications for a certificate for the Atlantic Bridge or Access Northeast Project. FEIS 1-5. Even after the FEIS issued, Algonquin continued to file supplemental information. *See* Exhibit 6 Table.

### **C. Indian Point Issues**

Just as the scope of Spectra's proposal has evolved throughout the proceeding, so too did issues related to the impact of the AIM project on the Indian Point station a nuclear powered generating facility owned by Entergy and located in the Village of Buchanan, New York. Unfortunately, neither the Certificate Order, nor the environmental reviews that preceded it fully convey the severity of the risks associated with the AIM project due to its proximity to the nuclear station.

At present, Algonquin's existing pipeline right-of-way crosses through the Indian Point property on the east side of the Hudson River Crossing. Significantly, the AIM project proposes a new right-of-way which includes installation of a high pressure 42-

inch pipeline across the Hudson River, south of the existing right-of-way. This is a significant change as it has the potential more than double existing capacity and substantially increase risks to surrounding residents. This segment of the pipeline would still include construction right-of-way within the Indian Point facility property, and the east side of Algonquin's proposed HDD crossing of the Hudson River would include a staging area also located on the Indian Point property. All told, the AIM Project would cross the Indian Point property for a total of 2,159 feet from about mileposts MPs 4.4 to 4.9. The Project would require about 2.4 acres of new permanent easement on the IPEC property, along with 1.9 acres of temporary workspace.

The Indian Point lands that would be crossed by the Project are located just 1,600 feet from the nuclear reactors and just 105 feet from vital structures that are necessary to prevent core damage and the major release of radioactive materials to the environment. The proposed AIM Project alignment within the Indian Point property would be located outside the facility's primary security zone. *See* FEIS 4-162 (describing Indian Point facility).

Alarmed by the AIM proposal, Paul Blanch, a professional engineer with more than 45 years of nuclear safety and operation experience formally requested the Nuclear Regulatory Commission (NRC) to perform an analysis to ensure the safety of the addition of a 42 inch pipeline in the vicinity of Indian Point. (See Exhibit 3, Indian Point Documents, Statement of Facts, Table at 1).<sup>9</sup> Mr. Blanch did not receive a response.

On August 21, 2014, Entergy, the plant operator, submitted its Final Safety Analysis to the NRC and withheld details under 10 CFR 2.390 for security concerns, concluding that the 42-inch pipeline would not jeopardize the safety of Indian Point.

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<sup>9</sup> *See* Exhibit 3, Statement of Facts re: AIM Gas Project and Indian Point.

Entergy's conclusions relied on assumptions that (1) gas flow could be terminated within three minutes in the event of a rupture and that (2) based on a three-minute release, the maximum impact radius would be 1195 feet. (2) *Id.* The Commission has relied on Entergy's report though as discussed below, in *Park V.F.*, *infra*, analysis by experts cast doubt on the accuracy of Entergy's safety conclusions.

Meanwhile, Algonquin continued to move forward with the AIM project. The Commission released the DEIS in August 2014, which inaccurately found that because of the distance of the proposed Project from the Indian Point facility, the route would not pose any safety hazards. On September 27, 2014, Mr. Blanch filed comments to FERC criticizing the DEIS conclusions and urging the Commission have a Hazards Analysis performed by an independent qualified party with oversight by legislators and residents. Mr. Blanch emphasized that failure of the gas line could:

Result in a total loss of cooling to the reactor cores and 40 years of inventory of spent fuel. There are no provisions within the area to combat this event until valves are remotely closed from the company's facility in Houston, Texas. In the meantime, the energy released from a ruptured line in one hour would exceed the energy released from one of the atomic bombs dropped on Japan in 1945.

Following Mr. Blanch's comments, in October 2014, Congresswoman Lowey wrote to the Commission, requesting a safety assessment related to Indian Point. In November 2014, the Town of Cortlandt submitted an analysis by pipeline safety expert Richard Kuprewicz, who criticized Entergy's Safety Evaluation,<sup>10</sup> particularly its assumption of a three-minute response time in the event of a rupture. Mr. Kuprewicz recommended "a more thorough and truly independent safety analysis of the 42-inch pipeline and its possible rupture effects." Kuprewicz Letter (November 3, 2014) at 9.

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<sup>10</sup> See Cortlandt Comments (November 2014), submitting Kuprewicz Analysis (November 3, 2014).

Notwithstanding all of these comments, the Commission did not change its conclusions regarding the safety of Indian Point in the FEIS, steadfastly insisting that the NRC's confirmatory analysis of the Entergy Safety Evaluation was acceptable. FERC's FEIS p. 5-17 states, "The NRC concluded that a breach and explosion of the proposed 42-inch diameter natural gas pipeline would not adversely impact the safe operation of the IPEC facility." Nor did the Commission explore the considerable hazards – such as an incident on the order of the atomic bomb – that Mr. Blanch described in his comments. After the FEIS was issued, on February 9, 2015, New York Senators Schumer and Gillibrand sent letters to the Commission, again raising the safety issues and calling for an independent risk assessment of the pipeline project next to Indian Point.

#### **D. Issuance of the Certificate**

On March 3, 2015, the Commission issued the Certificate Order. Among other things, the Certificate Order rejected requests for a supplemental EIS (Certificate Order ¶¶ 55), adopted the Nuclear Regulatory Commission's (NRC) determination that the AIM project would not create safety risks at Indian Point (*Id.* ¶¶ 106-07) (with no mention of letters from senators or any of the expert reports), denied improperly segmenting review of the AIM project from Atlantic Bridge (*Id.* ¶¶ 108-10) and refused to conduct a cumulative impacts analysis of Marcellus Shale development (*Id.* ¶¶ 112-30).

#### **E. Post-Certificate**

In the 30 days since the Certificate issued, the record still continues to evolve. Algonquin continues to supplement information provided, without opportunity for comment. *See* Exhibit 6, Table. At the end of February 2015, the NRC granted Mr. Blanch's FOIA request, which revealed that the NRC had improperly relied on the ALOHA analysis to evaluate project safety. In addition, the FOIA request released an NRC Petition Review Board hearing held January 28, 2015 with Messrs. Blanch and



Kuprewicz as witnesses regarding safety issues related to the AIM project and Indian Point. *See* Exhibit 3, Statement of Facts and attached transcript. Finally, in March 24, 2015, a congressional committee held a hearing on AIM and safety at Indian Point. *See* Hearing, online at <https://www.youtube.com/watch?v=umWpVZTqoJE>. At a minimum, these new facts cast doubt on the adequacy of the NRC review, and demand that the Commission must reconsider its findings in light of this evolving situation.

## V. APPLICABLE LEGAL STANDARD OF REVIEW

When granting a certificate under Section 7 of the Natural Gas Act, the Commission must find that “the proposed . . . construction . . . to the extent authorized by the certificate, is or will be required by the present or future public convenience and necessity.” 15 U.S.C. § 717f(e). Significantly, the certificate applicant “must bear the burden of proving that the public interest will be served.” *Michigan Consol. Gas Co. v. Fed. Power Commission*, 283 F.2d 204, 214 (D.C. Cir. 1960). All findings by the Commission must be supported by substantial evidence and demonstrate a rational connection between the facts found and the choice made. *ANR Pipeline v. FERC*, 771 F.2d 507, 517 (D.C. Cir. 1985) (noting substantial evidence requirement), *Western Resources v. FERC*, 9 F.3d 1568, 1575 (D.C. Cir. 1993) (reversing Commission order that failed to “comport with reason and logic”).

An agency’s action under NEPA is governed by the arbitrary and capricious standard. *Delaware Riverkeeper*, 753 F.3d at 1313; *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 376 (1989) (applying standard to review of decision not to prepare supplemental EIS). Simple, conclusory statements are not enough to fulfill an agency’s duty under NEPA, and the agency must comply with “principles of reasoned decisionmaking, NEPA’s policy of public scrutiny, and [the Council on Environmental

Quality's] regulations." *Delaware Riverkeeper*, 753 F.3d at 1313, citing *Found. on Econ. Trends v. Heckler*, 756 F.2d 143, 154 (D.C.Cir.1985).

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## V. ARGUMENT

### A. The Commission Unlawfully Segmented Review of the AIM Project from the Atlantic Bridge Project, and Failed to Consider the Impact of Future Construction on the Future and Convenience of the AIM Pipeline.

1. The Commission segmented the projects in violation of NEPA even though the record shows a geographic, functional and temporal relationship between the projects.

The CEQ regulations implementing NEPA require that an EIS include: (1) connected actions, including those that are “interdependent parts of a larger action and depend on the larger action for their justification;” (2) cumulative actions, “which when viewed with other proposed actions have cumulatively significant impacts;” and (3) similar actions, “which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together.” 40 C.F.R. § 1508.25(a). The purpose for the rule against segmentation is to “prevent an agency from dividing a project into multiple actions, each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.” *Wilderness Workshop v. BLM*, 531 F.3d 1220, 1228(10th Cir. 2008) (emphasis added); *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969 (9th Cir. 2006). In other words, the anti-segmentation rule prevents applicants and agencies from thwarting their NEPA obligations by chopping projects into smaller components in order to avoid considering their collective impact and to “conceal the environmental significance of the project or projects.” *Hammond v. Norton*, 370 F. Supp. 2d 226 (D.D.C. 2005).

An agency “impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate pieces under consideration.”

*Delaware Riverkeeper Network* 753 F.3d 1304, 1313. In *Delaware Riverkeeper Network*, the court found that the Commission had unlawfully segmented environmental review of four separate proposals by the same pipeline companies to upgrade different sections of the same line. In concluding that the projects were “inextricably intertwined” as part of the same pipeline, the court relied on facts showing a physical, functional and temporal nexus between the four proposals – such that [t]he end result is a new pipeline that functions as a unified whole thanks to the four interdependent upgrades.” 752 F.3d at 1308-1309. Accordingly, the court found that the Commission should have considered the separate units as part of a single environmental review.

Here, the Commission improperly segmented the AIM project from the Atlantic Bridge Project given the physical, functional and temporal nexus between the two projects. The AIM and Atlantic Bridge projects involve expansion of the same Algonquin pipeline in the same geographic area: New York, Connecticut, Rhode Island, and Massachusetts. Both projects will provide shippers an opportunity to obtain firm service at Ramapo for delivery to New England, will transport shale gas from Marcellus and are intended by Algonquin to “balance local distribution company (LDC) demand” in New England.<sup>11</sup>

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<sup>11</sup> Spectra Comments to New England States Committee on Electricity (June 27, 2014), online at [http://www.nescoe.com/uploads/Spectra\\_EnhancingElectricReliabilityinNE\\_27Jun2014.pdf](http://www.nescoe.com/uploads/Spectra_EnhancingElectricReliabilityinNE_27Jun2014.pdf).

The projects are also temporally connected. Algonquin filed its application for the AIM project on February 28, 2014 – midway through its open season for the Atlantic Bridge Project which had launched February 1, 2014.<sup>12</sup> And not coincidentally, the Atlantic Bridge Project initiated its pre-filing on January 30, 2015, just a week after the Final EIS for the AIM project was released. Moreover, the projects would have overlapped even more closely if Algonquin – instead of filing a deficient application requiring on-going supplementation over a period of six months – had held off a few months and submitted a complete application.

Finally, the AIM and Atlantic Bridge Project are functionally interdependent. A report prepared for the Town of Cortlandt by Richard Kuprewicz, a highly regarded pipeline expert described that Algonquin's replacement of a 26-inch pipeline with a 42-inch pipeline overcompensated for the upstream half of the project, but ignored serious constraints on the lower portion. Accordingly, Kuprewicz concluded that:

The attempt to replace segments of the 26-inch pipeline segment with a 42-inch pipeline across Cortlandt are not in sync with the claimed increased gas demands identified in the current AIM FERC filing and subsequent DEIS. *The operator appears to be positioning for further expansions on the Algonquin system and there are still serious bottlenecks on the looped system between the Stony Point and Southeast Compressor Stations that should have been included in this FERC application.*<sup>13</sup>

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<sup>12</sup> See Algonquin Open Season for Atlantic Bridge Project, online at <http://www.spectraenergy.com/content/documents/Projects/Atlantic-Bridge-Open-Season.pdf>.

<sup>13</sup> Town of Cortlandt Comments (November 21, 2014), submitting Report of Accufacts (November 3, 2014).

In addition, Mr. Kuprewicz observed that the gas velocities downstream of Cortlandt but upstream of the Southeast Compressor Station were well beyond 60 feet per second – some of the highest Mr. Kuprewicz had ever encountered in reviewing pipeline proposals. Mr. Kuprewicz concluded that “such high gas velocities suggest further pipe replacement projects are needed or forthcoming.”<sup>14</sup> Moreover, the presence of the high velocities also shows that the AIM project lacks any “independent utility” as a stand-alone project – since without further replacements, the high velocities will result in significant safety projects that would ultimately render the project inoperable.

The Commission ignored Mr. Kuprewicz’s expert analysis, choosing instead to rely solely on Algonquin’s submissions.<sup>15</sup> According to the Commission, these submissions showed certain parts of Algonquin’s system operating at maximum capacity, and therefore, Mr. Kuprewicz’s claims of “overbuild” were unfounded. But the Commission missed the point: Mr. Kuprewicz did not claim that upgrades were not required, but rather that Algonquin had overcompensated on one portion of the system, leaving the second portion in serious need of upgrade and suggesting that the projects had been segmented. For that reason, Mr. Kuprewicz recommended that the Commission review the AIM project in conjunction with Algonquin’s other expansions in order to determine the safest and most effective approach.

The Commission’s reliance on Algonquin’s representation that the projects are not connected runs afoul of *Delaware Riverkeeper* and other precedent governing

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<sup>14</sup> *Id.*, Accufacts Report at 7.

<sup>15</sup> See Certificate Order, P.46 (rejecting Mr. Kuprewicz’s segmentation argument based solely on “Flow diagrams and information **provided by Algonquin...**” (emphasis added)). At the very least, the differences between the analysis by Mr. Kuprewicz and Algonquin should have necessitated an evidentiary hearing to resolve these disputed material facts. See, Part V.J *infra*.

segmentation. In *Delaware Riverkeeper*, the pipeline claimed (far more plausibly than Algonquin does here) that when it started the project, it was not aware that it would follow up with three more phases. No matter, held the court, because:

the important question here is whether FERC was justified in rejecting commenters' requests that it analyze the entire pipeline upgrade project once the Northeast Project was under review and once the parties had pointed out the interrelatedness of the sequential pieces of pipeline which were, in fact, creating a complete, new, linear pipeline.

*Delaware Riverkeeper*, 753 F.3d at 1318.

Furthermore, courts recognize that project applicants understandably have a vested interest in prompt issuance of permits and therefore, may be inclined to portray a project as an independent unit to evade review and expedite the permit process. *See Florida Wildlife Fed'n*, 401 F. Supp. 2d at 1316, 1298 (S.D. Fla. 2005) (“...the concept of “independent utility” should not be manipulated to avoid significance or “troublesome” environmental issues, in order to expedite the permitting process.”) For that reason, courts impose a heavy burden on agencies to undertake independent analysis of an applicant’s proposed plans instead of accepting its own characterization at face value.

In *Hammond v. Norton*, 370 F.Supp. 2d. 226 (D.D.C. 2005), a federal court vacated BLM’s decision to limit the scope of its EIS to the northern segment of a petroleum pipeline proposed by Williams that would interconnect in Bazon, New Mexico to a second segment to be owned by Equilon that would run to Odessa, Texas. Originally, Williams and Equilon had proposed the project as a joint venture which was later disbanded when BLM indicated that a single EIS would be required for the entire pipeline. Relying on representations by Williams that it could readily access petroleum for customers even if the Equilon segment was not built, BLM concluded that the two

segments were independent and that the Williams' section was properly evaluated in a separate EIS.

The court disagreed, chastising BLM for unquestioningly accepting Williams' self-serving statements in the face of the project's origins as a joint venture as well as evidence showing limited alternative supply options other than Equilon. The court concluded:

In light of BLM's failure to seek substantiation of Williams' self-serving and unreliable statements about its petroleum supply arrangements in Bloomfield despite the [parties' joint venture] history of the Aspen project...the Court concludes that BLM acted arbitrarily and capriciously in concluding that the Williams pipeline had independent utility and that the Equilon pipeline was not a connected action under 40 CFR §1508.25(a).

*Hammond*, 370 F.Supp. 2d. 226 at 251.

As in *Hammond*, Algonquin's claim that the AIM and Atlantic Bridge Project are independent units is belied by record evidence to the contrary. Just as the record in *Hammond* showed that the project had originated as a joint venture spanning from New Mexico to Texas, here, presentations and press releases by Spectra, Algonquin's corporate parent, show that the AIM and Atlantic Bridge projects have been planned as a single unit.

Moreover, just as the pipeline in *Hammond* pulled the plug on its joint venture to evade environmental review, so too, Spectra chose to move forward incrementally to reduce project opposition. As Spectra's President of Transmission and Storage, Bill Yardley acknowledged in an interview with *Platt's*:

You can do it [build a new project] incrementally so you don't have to build the entire BCF all at once. And we think that it's the best solution for what the region really wants to see. And I think you end up with - well, I know you end up with a lot less potential opposition if you do that.<sup>16</sup>

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<sup>16</sup> See *Platt's Online* (August 3, 2014), online at <http://www.plattstv.com/video/new-england-seeks-more-gas-supplies-august-3/3706671906001>.



Not only is the Commission's treatment of the AIM and Atlantic Bridge Project as two separate and independent projects unsupported by the evidence, it is also unsupported by another participating agency. In comments filed October 6, 2014, the Corps of Engineers (New England Region) wrote:

In particular, we note that some of the same facilities for AIM including the Southeast, Oxford, Cromwell Jt, Chaplin Compressor Stations and the Cromwell 36-inch loop will be modified and/or extended to accommodate the new project. Our review of the NEPA document indicates that The DEIS contains little detail as it pertains to the Atlantic Bridge Project and its relationship to the AIM project. It is unclear as to whether the Atlantic Bridge Project is fundamentally just an expansion of the AIM facilities.

To sum, substantial evidence in the record shows a physical, functional and temporal relationship between the AIM and Atlantic Bridge Project. Moreover, the AIM project has no independent utility on its own given the presence of such high velocities resulting from the overbuild that the AIM project would be left with dangerously high velocities – a safety problem exacerbated further by proximity to a nuclear facility. Moreover, the Corps determined that the AIM and Atlantic Bridge projects were sufficiently related such that they should be considered in a single EIS. Only the Commission – improperly resting on Algonquin's self-serving submission – reached a different conclusion. The Commission erred in segmenting review of the AIM and Atlantic Bridge Project, and thus, must grant rehearing and prepare another EIS that evaluates the projects as a single unit.

**2. The Commission violated the public interest standard of the Natural Gas Act by ignoring the impact of imminent future development on the public necessity and convenience of the AIM project.**

Independent of NEPA, the public interest standard of the Natural Gas Act also requires that the Commission evaluate projects in context and with an eye to the future,

rather than in a vacuum. Indeed, the D.C. Circuit found that the Commission failed to consider the “present and future convenience” as required by the Natural Gas Act when it ignored a future development that the project sponsor had not included in its application. *City of Pittsburgh v. FPC*, 237 F.2d 741 (D.C. Cir. 1955).

In *City of Pittsburgh*, a pipeline sought approval under the Natural Gas Act to abandon a segment of pipeline, and transfer customers to another line. During the hearing, the company noted that “very shortly after” approval of the abandonment, it planned to file for authorization to expand its facilities – but that the future expansion was outside the scope of the proceeding. Several intervenors objected, and argued that the company’s future expansion had a bearing on the “public convenience and necessity” of the abandonment – because approving the abandonment might later increase the cost of expansion. Commission refused, explaining that it could not consider the future expansion because it was not included in the company’s application. But the court reversed, ruling that “The exclusion of evidence relating to future expansion and the refusal to consider future expansion in determining the public convenience and necessity were erroneous.”

Here, the future development of the Atlantic Bridge Project has a bearing on the Commission’s review of the AIM project. For example, by reviewing the AIM project in a vacuum, without taking the future Atlantic Bridge Project into account, the Commission ignored the likelihood that the development of both projects may be more costly, less efficient or duplicative, and therefore inconsistent with the public convenience.

*City of Pittsburgh* stands for another important principle as well: the Commission, *not the applicant*, drives the certificate process. In *City of Pittsburgh*, the court refused to abide the Commission’s failure to evaluate the future expansion because the project sponsor did not include it in the application. Yet, here the Commission follows lockstep

to Algonquin's marching orders, treating the AIM and Atlantic Bridge Project as separate effectively because Algonquin said so. The Commission's approach does not pass muster under *City of Pittsburgh*.

**3. Segmentation Prevented the Commission From Making Required Findings Under the Certificate Policy Statement.**

The Commission's Certificate Policy Statement is intended to advance the goal of ensuring adequate competitive pipeline alternatives while avoiding the possibility of overbuilding, unnecessary environmental disruption and unneeded exercise of eminent domain. *Certificate Policy Statement*, 88 FERC ¶61,227 (1999) at 2. To this end, the Commission must determine whether there is a need for the project and whether the project is subsidized by captive customers. When as here, a project is segmented, the Commission cannot make these findings. If it can only review one piece of a project in a vacuum, it cannot determine whether there will be overbuild, or whether a need remains for portions of one segment if another segment is added. Piggybacking one segment on top of another also makes it nearly impossible for the Commission to review whether ratepayers are paying for benefits that they receive from added infrastructure, or if they are subsidizing shareholder profits achieved through LNG export and spot market sales. A holistic review of all pieces of an interconnected project is the only way for the Commission to balance the benefits and burdens of the pipeline as required by the *Certificate Policy Statement*.

**B. The Commission Violated the Clean Water Act, 33 U.S.C §1341(a)(1), by Granting a Certificate under the Natural Gas Act Before the New York DEC Issued a Section 401 Water Quality Certificate.**

The AIM Pipeline will cross 102 water bodies (FEIS, ES-2) and therefore, must obtain a water quality certificate under Section 401 of the Clean Water Act, 33 USC §1341 from the impacted states – in this case, New York, Connecticut and

Massachusetts. According to Table 1.3-1 of the FEIS, Algonquin applied for 401 water quality certificates from New York DEC on April 10, 2014, from Connecticut DEEP on March 28, 2014 and Massachusetts DEP on April 11, 2014. None of these three required water quality permits had issued as of March 3, 2015 when the Commission awarded Algonquin a certificate for the AIM project.

Section 401 makes state certification of compliance with water quality standards a conditional precedent to issuance of any federal license. Specifically, Section 401 states in relevant part that:

Any applicant for a Federal license or permit to conduct any activity, including but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters shall provide the licensing or permitting agency a certificate from the State in which the discharge originates....*No license or permit shall be granted until the certification required by this section has been granted or waived.*

The meaning of this provision is plain: “States are required by § 401 of the Act to provide a water quality certification before a federal license or permit can be issued for any activity that may result in a discharge into intrastate navigable waters.” *PUD No. 1 of Jefferson County v. Washington Dept. of Ecology*, 511 U.S. 700, 707 (1994) (emphasis supplied).

This sequencing, in turn, affects the ability of a federal agency like FERC to issue licenses and permits. As this court noted in *City of Tacoma v. FERC*, 460 F.3d 53, 68 (D.C. Cir. 2006): “FERC’s role is limited to awaiting, and then deferring to, the final state decision... FERC . . . has an obligation to determine that the specific certification ‘required by [section 401] has been obtained,’ and without that certification, FERC lacks authority to issue a license” (emphasis supplied).

Here, there is no dispute that Algonquin was required to obtain a Section 401 water quality certificate from New York, Connecticut and Massachusetts, and failed to

do so prior to the Commission's issuance of the certificate. Accordingly, the Commission lacked authority to issue Algonquin a certificate for the AIM project.

The fact that the Commission's certificate contains a condition (Appendix B, ¶9) prohibiting Algonquin from seeking approval to commence construction until it receives all required federal authorizations does not cure the Commission's statutory violation. The Commission lacks authority under Section 7 to modify the strict requirements of Section 401. That Congress intended the Commission to abide by the Clean Water Act is clear from Section 717b(d) of the Natural Gas Act, which expressly preserves states' permitting authority under the Clean Water Act, Clean Air Act and Coastal Zone Management Act.

Although the Commission has a long-standing practice of issuing so-called "conditioned certificates" to circumvent the requirements of Section 401, this questionable practice is currently on review in *Gunpowder Riverkeeper v. FERC*, now pending before the United States Court of Appeals for the District of Columbia Circuit.<sup>17</sup> Oral argument was held on February 20, 2015, so a ruling that may impact the outcome of this case is imminent. For that reason alone, the Commission should stay this proceeding pending a decision in *Gunpowder Riverkeeper v. FERC*.

### **C. The Commission Violated NEPA and CEQ Regulations by Failing to Consider Cumulative Impacts.**

The Commission's regulations implementing NEPA require it to identify the "cumulative effects resulting from existing or reasonably foreseeable projects." 18 C.F.R. §380.12(b)(3). The CEQ regulations define cumulative impacts as those which result from:

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<sup>17</sup> *Gunpowder Riverkeeper v. FERC*, Docket No. 14-1062 (D.C. Cir., filed April 18, 2014).

the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes them. Cumulative impacts can result from individually minor by collectively significant actions taking place over a period of time.

40 C.F.R. §1508.7.

As discussed below, the Commission failed to consider cumulative impacts as contemplated by NEPA and these implementing regulations.

**1. The Commission did not consider the cumulative impacts of reasonably foreseeable infrastructure.**

In *Delaware Riverkeeper*, the court determined not only that the Commission had improperly segmented four different project proposals, but also that it failed to consider the cumulative impacts of each segment. As the court explained, a meaningful assessment of cumulative impacts must identify:

(1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions — past, present, and proposed, and reasonably foreseeable — that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate." *Grand Canyon Trust v. FAA*, 290 F.3d 339, 345 (D.C. Cir. 2002).

The court found that the Commission's conclusory statement that the project "is not expected to contribute to cumulative impacts" failed to satisfy the NEPA.

Here, the Commission's review of the cumulative impacts of the AIM, Atlantic Bridge and Northeast Access projects was abbreviated, and its findings conclusory, notwithstanding that the scope and impacts of all three projects were reasonably foreseeable and expected to have a larger impact if the individual actions are allowed to accumulate. See Exhibit 2, Table of Spectra Project Development. For example, the Atlantic Bridge Project – which had concluded its open season six months before the Commission issued its DEIS – could add up to 600,000dekatherms per day (Dth/ day)

of additional capacity, almost twice the size of the AIM action.<sup>18</sup> Meanwhile, a third Spectra pipeline expansion – known as the Access Northeast Project – threatens to more than double the capacity provided by the Proposed AIM action and the Atlantic Bridge Project, and will interconnect with an LNG terminal to export gas overseas. Spectra states that Access Northeast will “complement Spectra Energy’s Algonquin and Maritimes pipelines by up to 1,000,000 Dth/day of natural gas per day.”<sup>19</sup> The DEIS even acknowledges that if construction schedules for AIM and the Atlantic Bridge project were to overlap, that there could be cumulative impacts on air quality, wetlands and habitat and noise. *See* DEIS 4-272 (“If the Atlantic Bridge Project gets constructed, air emissions during operation of compressor stations would overlap with the operational air emissions of the AIM Project.”)

The FEIS, as well as the Certificate Order simply ignore these realities. The FEIS goes so far as to take the position that the Atlantic Bridge project may not even happen (there are frequent references to “if it is actually built...” – even though the Atlantic Bridge project was already in open season when Algonquin filed its AIM application. Moreover, neither the DEIS nor the FEIS mention the Access Northeast Project – even though Spectra’s own presentations show that the project, as well as the potential for LNG export of shale gas overseas – is one of the financial drivers of Spectra’s

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<sup>18</sup> *See* Spectra Energy Corp. letter to New England States Committee on Electricity, Feb. 10, 2014, [http://www.nescoe.com/uploads/Spectra\\_CommentonGasLevel\\_Revised\\_10Feb2014.pdf](http://www.nescoe.com/uploads/Spectra_CommentonGasLevel_Revised_10Feb2014.pdf) (last accessed Sept. 15, 2014).

<sup>19</sup> *See* Spectra Energy, Spectra Energy and Northeast Utilities Announce New England Energy Reliability Solution, <http://www.spectraenergy.com/Newsroom/News-Archive/Spectra-Energy-and-Northeast-Utilities-Announce-NewEngland-Energy-Reliability-Solution/> (last accessed Sept. 24, 2014); also Exhibit 2 (Table of Project Development).

infrastructure development.<sup>20</sup> Likewise, the Commission's conclusion that no impacts will result due to minimal project overlap and "carefully developed resource protections" for the AIM project is not based on evidence, and begs the question. After all, how can the Commission develop adequate protections for the AIM project if fails to take into account harm to the same resources that will be caused by Atlantic Bridge? In short, the Commission's cumulative impacts analysis of expected and foreseeable infrastructure development does not satisfy *Delaware Riverkeeper* and NEPA requirements.

## 2. The Commission did not consider Marcellus Shale development.

The CEQ regulations require the Commission to consider indirect impacts of proposed actions. Indirect impacts are caused by the proposed action and occur later in time or farther removed in distance than direct project impacts, but are still reasonably foreseeable. 40 C.F.R. §1508.8(b). In the FEIS, the Commission stated that it would not study Marcellus Shale impacts, finding that they were located more than ten miles from the project. FEIS 4-290.<sup>21</sup> Subsequently, in the order issuing a certificate, the Commission added that effects associated with shale gas development are not sufficiently causally related to the AIM Project to warrant a detailed analysis, nor are the potential environmental impacts foreseeable as required by the CEQ regulations.

Certificate Order P. 128, *citing Central New York Oil and Gas Co. LLC*, 137 FERC ¶61,121

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<sup>20</sup> See Table 2 (Exhibit of Spectra Project Development), with links to various sources describing the interrelationship between the projects.

<sup>21</sup> In its comments filed March 2, 2015, EPA explained that the FEIS' reference to ten-mile limit for consideration of cumulative and indirect impacts is not "in and of itself" the standard under NEPA. The Commission does not appear to have adopted the 10-mile rationale as a basis for refusing to consider cumulative impacts, and therefore, we do not discuss this point further.



at ¶¶81-101(2011), *order on reh'g*, 138 FERC ¶61,104 at PP 33-49 (2012), *petition for review denied, sub nom, Coalition for Responsible Growth v. FERC*, 485 Fed. Appx. at 475-75.

Under the Commission's own "causal connection test," the cumulative impacts of Marcellus Shale drilling should have been studied. In that regard, CYNOC is distinguishable; there, the Commission found that the pipeline did not depend upon Marcellus gas and that shippers would receive gas only from other sources. *See CYNOC*, 137 FERC ¶61,121 at 88- 90. Here, Spectra marketed the open season for the AIM project by touting its potential to transport shale gas to New England markets, and even promoting the pipeline with a map showing a prominent yellow arrow labeled "Marcellus supply" pointing towards the pipeline.<sup>22</sup>



Similarly, Spectra's Open Season information for the Atlantic Bridge project states:

Natural gas production in the Marcellus and Utica regions is currently at approximately 14 Bcf/d, and Algonquin is well connected to this supply through approximately 3 Bcf/d of existing pipeline interconnections on

<sup>22</sup> *See* Comments of Bill Yardley, Spectra Vice President (describing that AIM will connect new Marcellus supply), online at <http://www.pipelineandgasjournal.com/spectra-energy-holds-open-season-aim-project>.

pipelines with a capacity in excess of 10 Bcf/d. Algonquin and Maritimes are uniquely positioned to deliver these supplies of natural gas to end use markets through their extensive existing city gate footprint and connections to a significant percentage of the ISO New England (ISO-NE) power generation fleet. **The Atlantic Bridge Project would provide greater access for these abundant supplies from regional production to flow into the New England States and Maritime Provinces.**<sup>23</sup>

Algonquin's public statements about the availability of capacity will also stimulate additional drilling, since suppliers would now have the means to transport gas to market – particularly to lucrative foreign markets. These facts establish a sufficient causal connection between Spectra's AIM pipeline and related infrastructure expansion and Marcellus drilling. Given the causal connection between the pipeline and shale extraction, the Commission erred failing to consider the cumulative impacts of shale development as part of the FEIS.

Not only did the Commission deny a causal and foreseeable connection between shale gas extraction and the proposed pipeline, but it imposed an artificial ten-mile range on its review of cumulative impacts. EPA criticized the Commission's practice, arguing that "geographic proximity is not in and of itself the standard for NEPA's requirement to consider impacts that have a reasonably close causal relationship to the proposed federal action."<sup>24</sup>

Moreover, courts reject this approach as well. For example, in *LaFlamme v. FERC*, 852 F.2d 389 (9th Cir. 1988), the Ninth Circuit criticized the Commission's environmental analysis of the impact of a hydroelectric project on the river basin where it would be sited, finding that the EIS was unduly limited to "assessing the impact of only that project's diversion dams and other proposed facilities in that

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<sup>23</sup> Spectra Open Season for Atlantic Bridge, online at [http://www.nescoe.com/uploads/Spectra\\_CommentonGasLevel\\_Revised\\_10Feb2014.pdf](http://www.nescoe.com/uploads/Spectra_CommentonGasLevel_Revised_10Feb2014.pdf) (emphasis added).

<sup>24</sup> EPA Letter to FERC (March 2, 2015) at 5.

project's area," rather than analyzing the cumulative effect that other projects outside the area might likewise have on the basin. *LaFlamme v. FERC*, 852 F.2d 389, 401 (9th Cir. 1988). The court remarked that the Commission's environmental analysis failed to encompass broad consideration of reasonably foreseeable past, present and future impacts as required by NEPA, and accordingly, remanded the Commission order. Here too, the Commission cannot constrain its analysis to focus on just the AIM project, or just impacts within an artificial radius, but must undertake a robust cumulative impact analysis that includes the effects of the project on Marcellus shale extraction activities.

### **3. The Commission did not consider greenhouse gas and climate change.**

Recent guidance issued by CEQ on December 19, 2014 instructs federal agencies to consider greenhouse gas emissions and climate change as part of environmental review.<sup>25</sup> Specifically, CEQ directs agencies to take into account emissions from activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for the agency action ( "upstream emissions") and as a consequence of the agency action ( "downstream emissions").

The FEIS failed to take existing CEQ guidance into account in evaluating the environmental impact of the release of greenhouse gas (GHG) emissions. The FEIS claims that emissions from production are not "reasonably foreseeable." It argues that the development of the Marcellus shale drives the amount of production, rather than the addition of pipelines to carry the gas to market, and it cannot anticipate how this growth will occur.

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<sup>25</sup> CEQ Draft Guidance, online at [https://www.whitehouse.gov/sites/default/files/docs/nepa\\_revised\\_draft\\_ghg\\_guidance\\_searchable.pdf](https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf).

The Commission's argument is backwards. The whole point of the project in question is to provide additional capacity to get gas to market. Without a market, and a means to getting the gas to market (be it truck, rail or pipeline), the gas will remain in the ground.

The 2010 CEQ Guidance, available to the Commission, provided a number of suggestions on methods it might apply to calculate the emissions.<sup>26</sup> One way to calculate the amount of additional gas that will be produced in this case is to start with submissions by the applicant of added capacity created by the pipeline, and then factor in the anticipated project lifetime. The range of GHG leakage rates from production wells has been established in a series of studies, enabling the simple calculation of likely GHG emissions.<sup>27</sup> Based upon this calculation, the social cost of the added GHG emissions can then be calculated and included in the evaluation.<sup>28</sup>

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<sup>26</sup> 2010 CEQ Guidance at 4.

<sup>27</sup> Howarth and Ingraffea, Climate Change, May 2011, <http://www.acsf.cornell.edu/Assets/ACSF/docs/attachments/Howarth-EtAl-2011.pdf>, concluded that somewhere between 3.6 percent and 7.9 percent of the methane from fracking wells was escaping into the atmosphere as it's made its way from underground to end user. In April, Howarth published a review of all the data sets so far, and they showed that his original numbers were pretty likely correct: Up to 5 percent of the methane probably leaks out before the gas is finally burned." Many more studies are due to come out this year. <http://insideclimatenews.org/news/20150107/frackings-methane-leakage-be-focus-many-studies-year>

<sup>28</sup> In commenting on the SDEIS of the Keystone XL project, the EPA, referring to the 2010 CEQ guidance, provided some suggestions on factors that should be take into consideration in conducting such an analysis, *e.g.*, the project lifetime and the social cost of such emissions:

. . . recognizing the proposed Project's life time is expected to be at least fifty years, we believe it is important to be clear that under at least one scenario, the extra GHG emissions associated with this proposed Project may range from 600 million to 1.15 billion tons CO<sub>2</sub>-e, assuming the lifecycle analysis holds over time (and using the SDEIS' quantitative estimates as a basis). In addition, we

The situation here is completely analogous to the one analyzed by the Department of State with regard to the Keystone XL pipeline. One pipeline involved a pipeline to carry tar sands, and this one involves a pipeline to carry natural gas, but both present questions of whether production emissions will or will not be accelerated by pipeline construction. The uncertain development of the tar sands region in Canada was not considered a reason to determine that the emissions from production were not reasonably foreseeable.

The FEIS also appears to take that position that because it was difficult to figure out how to perform the analysis, it was not required. This argument might have some relevance were there evidence in the record that the Commission had made a serious effort to look into how they might proceed. The failure of the Commission to mention either of these suggests that the agency sidestepped its obligation to conduct a meaningful analysis. It does not evidence that they such an analysis was not feasible.

**4. The Commission did not consider methane emissions and radon associated with the compressor station upgrades, pigging stations and other project facilities.**

The Commission did not explain why it decided not to consider the environmental impact of GHC emissions from the proposed pipeline. The Commission's failure to do

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recommend that the Final EIS explore other means to characterize the impact of the GHG emissions, including an estimate of the "social cost of carbon" associated with potential increases of GHG emissions. The social cost of carbon includes, but is not limited to, climate damages due to changes in net agricultural productivity, human health, properly damages from flood risk, and ecosystem services due to climate change. Federal agencies use the social cost of carbon to incorporate the social benefits of reducing CO<sub>2</sub> emissions into analyses of regulatory actions that have a marginal impact on cumulative global emissions; the social cost of carbon is also used to calculate the negative impacts of regulatory actions that increase CO<sub>2</sub> emissions.

EPA 2011 comments at 6.

such an analysis was the subject of explicit EPA criticism in their review of the final EIS, which also directed the FERC to the evidence it should consult:

We also continue to recommend that FERC consider relevant studies regarding methane leaks and emissions. With regard to EPA regulations concerning methane emissions from natural gas processing and transmission sources, please note that EPA is planning to issue a proposed rule later this year that will set standards for emissions from these sources (EPA Letter, March 5, 2015).

EPA Letter, March 5, 2015. The Commission could have examined a January 2015 study of emissions from Boston's aging pipelines.<sup>29</sup> The study found that emissions of GHGs from those pipelines were much greater than had been thought. In addition, the need to examine emissions from pipeline leaks was raised in comments filed in response to the draft EIS, comments to which the FERC did not respond in the final EIS.<sup>30</sup>

Nor does the FEIS or Certificate Order propose to mitigate GHC leakage. The Commission acknowledges that fugitive methane emissions from compressors along the pipeline will be minimized through management actions. Certificate Order ¶ 101. While important, this does not address leaks from the miles of additional pipeline to be built; only the compressor stations.

The final Certificate also should have explicitly required the company to comply with any EPA guidelines or requirements concerning methane leaks that are issued during its projected life. Further, in light of the uncertain success of these mitigation

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<sup>29</sup> <http://www.csmonitor.com/Environment/Global-Warming/2015/0124/Cities-may-be-leaking-more-heat-trapping-methane-than-previously-thought>

<sup>30</sup> Statement of Rhode Island chapter of the Sierra Club, September 16, 2014 (Burrillville hearing), Appendix II of the Final EIS, CO-9. The citation refers to a side by side version of the comments showing the response of the agency to its various particulars. There is no mention of FERC's views on the section of those comments pointing to the need to evaluate the GHG emissions from pipeline leaks.

measures, the Commission should require emission monitoring and recording to enable better regulation and control when such measures become available.

Finally, even FERC's limited analysis of GHG emissions from the compressor stations is invalidated by the use of an outdated estimate of the global warming potential (GWP) of methane. The Final Environmental Impact Statement says, on p. 4-221, "CO<sub>2</sub> has a GWP of 1, CH<sub>4</sub> has a GWP of 25..." But in fact, a recent report by the Intergovernmental Panel on Climate Change (IPCC) found the GWP of methane (CH<sub>4</sub>) to be 34, not 25, over the commonly-used 100-year time frame, and a whopping 86 over a 20-year time frame. The IPCC further states, "There is no scientific argument for selecting 100 years compared with other choices." On the contrary, Joe Romm, physicist and Senior Fellow at American Progress, cautions: "Given that we are approaching real, irreversible tipping points in the climate system, climate studies should, at the very least, include analyses that use this 20-year time horizon."

<http://thinkprogress.org/climate/2013/10/02/2708911/fracking-ipcc-methane/>

Thus, FERC should redo its analysis of GHG emissions from the project, including estimated emissions not only from the compressor stations but also from pipeline leaks and from increased shale gas development, using a GWP of 86 rather than 25 for methane, which will clearly result in a far higher estimate of the project's GHG emissions.

Finally, the Commission dismisses concerns over radon exposure from burning pipeline gas indoors, Certificate Order ¶¶ 102-03, making a wild misstatement that "Studies have demonstrated that levels of radon in interstate pipelines carrying gas from the Marcellus shale will be below average indoor and outdoor radon levels." In fact, the level of radon depends on where in the pipeline the measurements are taken. By contrast, the Pennsylvania Department of Environmental Protection studied

this same issue and found that at the well, "The median value was 43.6 pCi/L, and the maximum value was 148 pCi/L."<sup>31</sup>

Radon remediation is required in a home if it hits 4.0 pCi/L. Radon decays over the course of a few days, so depending on where the gas is in the pipeline, levels of radiation will vary, but certainly will be higher than both average indoor and outdoor radon levels.

**D. Given the Availability of Viable Project Alternatives, The Commission Failed To Demonstrate A Need for the Project As Required by the Certificate Policy Statement.**

The Commission's Certificate requires the Commission to balance the public benefits of the project against adverse impacts. *Certificate Policy Statement*, 88 FERC ¶ 61,227 at 24-26. Generally, a project is deemed to have public benefits if an applicant can demonstrate that a need for the project exists. Algonquin made no such showing here.

**1. The Applicant cannot show that this particular project is needed when other less intrusive options could serve claimed demand.**

A recent *Boston Globe* article<sup>32</sup> reports on a study showing that the amount of methane leaking from natural gas pipelines, storage facilities, and other sources in the Boston area alone is as much as three times greater than previously estimated — a loss that contributes to the region's high energy costs. According to the study, the leak volume would be enough to heat as many as 200,000 homes a year and is valued at \$90 million a year.

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<sup>31</sup> See [http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-105822/PA-DEP-TENORM-Study\\_Report\\_Rev\\_0\\_01-15-2015.pdf](http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-105822/PA-DEP-TENORM-Study_Report_Rev_0_01-15-2015.pdf).

<sup>32</sup> *Boston Globe*, January 21, 2015 (online at <http://www.bostonglobe.com/metro/2015/01/22/natural-gas-leaks-boston-area-are-far-more-extensive-than-thought/5BykQrnaGRr2XLtxpHqLIM/story.html#>).



Moreover, consideration of an alternative of repairing leaks and increasing efficiencies is consistent with Commission policy. In November 2014, the Commission released a proposed policy on cost recovery for modernization of natural gas facilities, which acknowledges the problem of leakage and offers rate incentives to pipelines that choose to identify and repair leaks to increase efficiency.<sup>33</sup> In light of the Commission's recent policy initiative, its failure to consider leak repair as an alternative in the EIS was unreasonable.

## **2. Other resources such as renewables can meet need.**

The natural gas industry and their lobbyists have successfully persuaded the New England Governors, and many other public officials at large and the Commission itself that, without the AIM Project, New England will suffer from a severe shortage of natural gas in the immediate future and that because of increasing demand, capacity must be increased significantly. This proposition is not supported by the existing evidence.

The Commission failed to consider the effect of alternative energy sources - such as solar and wind - on future natural gas demand. A report released by the DOE last month called into question the gas industry's justification for increased pipeline construction. It stated in its Key Finding 1 that, "Diverse sources of natural gas supply and demand will reduce the need for additional interstate natural gas pipeline infrastructure," and Key Finding 2 that "Higher utilization of existing interstate natural gas pipeline infrastructure will reduce the need for new pipelines. The U.S. Pipeline system is not fully utilized because the flow patterns have evolved with changes in supply and demand."

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<sup>33</sup> See *Notice of Proposed Policy on Cost Recovery Mechanisms for Modernization of Natural Gas Facilities*, 140 FERC ¶61,147 (2014).

**E. The Commission violated NEPA by allowing moving targets for submission of additional information with no opportunity for meaningful comment.**

NEPA regulations require public review and comment of a Draft EIS, and at the conclusion of FERC's review, it requires the Agency to "assess and consider comments both individually and collectively" and may "modify alternatives including the proposed action," "develop and evaluate alternatives not previously given serious consideration," "supplement, improve, or modify its analyses," "make factual corrections," or "explain why comments do not merit further agency response." 40 CFR Part 1504 (a)(1) – (4). FERC's NEPA review of this application impermissibly ignores these legal obligations – since items were either not considered, or were left to be considered on a timeline that prevents public review. *See also Native Ecosystems Council v. Forest Service*, 418 F.3d 953, 965 (9<sup>th</sup> Cir. 2005)(noting that EIS must be revised where information is so incomplete that neither the decision-makers nor the public could make an informed decision about the project and its alternatives).

Here, the changing information continuously submitted by Algonquin, long after deadlines for comment had expired presented a moving target. As attached Exhibit 6 shows, approximately 75 percent of Algonquin's submissions came *after* the September 29, 2014 comment deadline for the EIS expired. And Algonquin continued to supply new information even after the FEIS issued on January 23, 2015. These untimely submissions deprived the public of a meaningful opportunity for comment.

**F. The Commission Violated NEPA by Impermissibly Delegating Review to Other State Agencies, Such As the New York State Department of Environmental Conservation.**

**1. The Commission may not delegate review to other agencies.**

The FEIS finding of no significant impacts rests on an assumption that state agencies will issue permits which include adequate protection for water and air quality.

The problem, however, is that the Commission prematurely made a finding of no significant impact without ensuring the adequacy of these permit conditions which have not yet been issued.

The Commission's reliance on other agencies to evaluate and mitigate impacts – particularly when those permits have not been issued – is legally insufficient under NEPA as interpreted by *Idaho v. I.C.C.*, 35 F.3d 584 (D.C. 1994). There, the court found that the Interstate Commerce Commission (ICC) failed to take the required “hard look” when it approved Union Pacific's abandonment of, and salvage activities on, a railroad line in Idaho. There, the ICC imposed six conditions that included requirements to consult with EPA, the Corps of Engineers, and to obtain a Clean Water Act permit if IDEQ determined one is necessary. 35 F.3d at 589-90. The ICC then found that the project would not significantly affect the quality of the human environment “with the above-mentioned protective conditions.” *Id.* at 590.

The court found that the ICC had failed to take the required “hard look” because it “deferred to the scrutiny of others by authorizing salvage subject to conditions that require Union Pacific to consult with various federal and state agencies about the specific environmental impacts that fall within their jurisdictions.” *Id.* The court went on to explain that:

NEPA mandates a case-by-case balancing judgment on the part of federal agencies. In each individual case, the particular economic and technical benefits of planned action must be assessed and then weighed against the environmental costs; alternatives must be considered which would affect the balance of values.... The point of the individualized balancing analysis is to ensure that, with possible alterations, the optimally beneficial action is finally taken . . . Certification by another agency that its own environmental standards are satisfied involves an entirely different kind of judgment. Such agencies, without overall responsibility for the particular federal action in question, attend only to one aspect of the problem . . . Certifying agencies do not attempt to weight

[environmental] damage against the opposing benefits. Thus the balancing analysis remains to be done.

*Idaho*, 35 F.3d at 597, quoting *Calvert Cliffs*, 449 F.2d at 1123.

*Idaho* teaches that an agency fails to take the required “hard look” where it “defers to the scrutiny of others” by relying entirely on conditions requiring the project’s compliance with environmental laws imposed by other regulatory entities, and conducts no independent analysis of the environmental impact itself. *Idaho*, 35 F.3d at 595-596. Yet, that as discussed in the next sections is exactly what the Commission did here. As discussed below, the Commission assumed that if these permits are satisfied that the project would not have significant impacts. In so doing, the Commission improperly delegated its regulatory responsibilities.

## **2. The Commission’s improper delegation of review to New York DEC**

FERC impermissibly rejected its obligation to analyze and consider comments as they relate to improving the agency’s analysis and ultimate conclusions regarding issues of freshwater wetlands and air pollution. These issues were not considered in the Draft EIS - shielding them from public review - and were instead delegated to State agencies to issue environmental permits. A state permit review under the Clean Water Act or Clean Air Act is not a substitute for NEPA review - by definition - it is one of the final steps necessary to authorize a project.

## *Freshwater Wetlands*

The FERC staff's *Conclusions and Recommendations Section* in the *Draft EIS* concludes that

if the proposed Project is constructed and operated in accordance with applicable laws and regulations, the mitigating measures discussed in this EIS, and our recommendations, most of these adverse impacts would be reduced to less than significant levels.

The FERC staff's mitigation recommendations were made in the incomplete *Draft EIS*. However, FERC did not require critical information to be submitted until the day of the close of the public comment period. Thus, when supplemental information was submitted to FERC on the last day of the comment period, the public was cut out of any review. FERC completely ignored its review requirements, the letter, and the spirit, and intent of NEPA when it took these actions. Of the forty-two (42) individual recommendations handled this way by Commission staff, *Number 18* on the list published in the *Draft EIS* is:

Prior to end of Draft EIS comment period, file site-specific information regarding location of wetlands meeting criteria of non-saturated condition.

The Clean Water Act requires permits for work in and around freshwater wetlands and a certification that water quality will be protected under State and Federal law. *See* Clean Water Act Section 401. The federal program is delegated by EPA to the Department of Environmental Conservation in New York. Wetlands permitting jurisdiction is also addressed in part by the Army Corp of Engineers.<sup>34</sup> There were 5

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<sup>34</sup> Reynolds Hills twice submitted comments to the Army Corp of Engineers. On September 29, 2014, Reynolds Hills urged that the Army Corp properly identify and regulate the freshwater wetlands. On February 2, 2015, Reynolds Hills urged that the Army Corp delineate the wetland and assert its Clean Water Act Section 404 jurisdiction over the wetlands.

specific permit applications submitted to the New York State DEC to its delegated programs.<sup>35</sup> However, the wetland issues were never made fully available by FERC during the NEPA public comment and review.

The record shows that FERC wetlands analysis ignored significant wetlands in the path of the pipeline. A cursory review of the Reynolds Hills and Blue Mountain Reservation right-of-ways of the pipeline company makes that abundantly clear. There were significant consequences from FERC's failing to do what was required by law on this issue. First, the Commission did not consider these issues in its NEPA review. Then, when the issue was impermissibly delegated to New York, the wetland review and draft permits were not provided to the public before the close of the public comment period. NEPA consideration of environmental issues such as impacts to freshwater wetlands goes to the validity of the entire project as proposed. On the contrary, a State wetlands permit process goes to authorizing specific work to be conducted in and around a freshwater wetland. Thus, the Commission improperly delegated its obligations to a state agency that is not obligated to undertake the same review or to even look at the larger picture issues of the permit it is reviewing.

### *Clean Air Act*

The Commission handled the review of critical air pollution issues similar to the way it handled the freshwater wetlands issues - precluding the public from review and then impermissibly passing their required analysis to a different jurisdiction. Another one of the forty-two issues identified by Commission staff, that was not required to be

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<sup>35</sup> See Application ID: 3-9903-00099/00002 - Freshwater Wetlands; Application ID: 3-9903-00099/00003 - Part 401 Water Quality Certification; Application ID: 3-9903-00099/00004 - Stream Disturbance; Application ID: 3-3730-00060/00013 - Air Title V - Southeast Compressor Station; and, Application ID: 3-3928-00001/00027 - Air Title V - Stony Point Compressor Station.

nor that was submitted to FERC until the close of the public comment period, was *Number 35* on the list published in the Draft EIS that states:

Provide update regarding air permit requirements associated with new/existing M&R stations (NY, CT, MA).

The Commission failed to meet its obligations under *40 CFR Part 1504* to review and assess the proposed project and failed to determine whether the analyses needed to be changed or supplemented. Simply stated, the metering and regulation station impacts on the public health and the communities in which they are located were submitted by the applicant on the day of the close of the public comment period and thus not subject to any review. These vitally important air pollution issues were left to be considered in a state permitting process instead of in the NEPA process as mandated by law.

The metering and regulating systems are located, among other locations, in the City of Peekskill, which has a significant environmental justice community. As noted *infra*, the Commission failed to meet the federal regulatory requirements for the CEQ Environmental Justice Policy. The Commission impermissibly failed to meet the Environmental Justice policy requirements. The NEPA review process provides the proper legal forum to review and analyze these issues during the consideration of whether to approve a project. FERC, then, impermissibly delegated the consideration of important air pollution issues to the New York State DEC.

A review of the New York State DEC permitting process demonstrates the cascading effects of FERC's failure to meet its NEPA obligations and its decision to pass the issue, impermissibly, to another agency for a permit review.

In New York, the air pollution regulation states, in pertinent part:

**§211.1 Air pollution prohibited**

No person shall cause or allow emissions of air contaminants to the outdoor atmosphere of such quantity, characteristic or duration which are injurious to human, plant or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life or property. Notwithstanding the existence of specific air quality standards or emission limits, this prohibition applies, but is not limited to, any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emission, either alone or in combination with others.<sup>36</sup>

Members of the public have objected to the New York State DEC's handling of this permit provision. The disproportionately high concentrations of these infrastructure systems in the Environmental Justice communities are required to be considered in the NEPA review. These provisions were ignored by FERC. Further, these infrastructure systems are critical components of the operating pipeline and its compressor stations and include metering and regulating stations and pipeline cleaning stations in various locations. Instead of conducting the required public comment and Commission review to determine whether the air contaminant emitting systems should be placed in an already overburdened community, FERC impermissibly delegated its obligations to permit processing staff in a New York agency. The air permit process is not the forum to discuss the larger issues NEPA requires FERC to conduct.

**Conclusion**

The Commission failed to meet its NEPA obligations on the review of water and air issues. The law clearly places an obligation on FERC to take a hard look at a proposed project and its alternatives, and to assess and to analyze the issues prior to making any decisions. The Clean Air Act and the Clean Water Act have permitting programs that are

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<sup>36</sup> 6 NYCRR Section 211.1.



very important to public health - to families and children - and to overall environmental quality. Instead of analyzing, assessing, and properly and duly deciding, FERC decided - impermissibly and illegally - to have the State of New York issue permits instead of FERC meeting its obligation to determine whether or how this project should proceed.

**G. Environmental Condition 16 Violates NEPA by Failing to Explicitly Require Supplemental Environmental Review of a Non-HDD Hudson River Crossing**

Algonquin has proposed the horizontal directional drill (“HDD”) crossing method for the Hudson and Still River crossings. Certificate Order at 23. Use of HDD was the only method for crossing the Hudson River evaluated in the FEIS because, as the Order states, “The final EIS finds that use of the HDD crossing method to cross waterbodies and implementation of the mitigation measures outlined in Algonquin’s Erosion and Sediment Control Plan (E&SCP) and other project-specific plans will avoid or adequately minimize impacts on surface water resources.”

However, it is possible that HDD will not be feasible. Based on the geological nature of the soils and bedrock beneath the Hudson River, the FEIS determined that the possibility that HDD under the Hudson would fail was “relatively high.” FEIS at 4-46. To address this possibility, Environmental Condition 16 provides that, “[i]n the event of an unsuccessful HDD at the Hudson or Still Rivers,” Algonquin must file a plan for crossing the waterbody for approval, “concurrent with the submission of its application to the U.S. Army Corps of Engineers and other applicable agencies for a permit to construct using this alternative crossing plan.” Order at 61. According to Condition 16, the alternative crossing plan must be approved by the Director of the Office of Energy Projects prior to construction. *Id.*

Condition 16 must be reconsidered because it fails to provide for the supplemental environmental review that would be required in the event that Algonquin

must proposed an alternative river-crossing plan. NEPA and the CEQ regulations require the preparation of a Supplemental Environmental Impact Statement (“SEIS”) whenever: “(i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 42 C.F.R. § 1502.9(c)(1); *Marsh v. Or. Natural Resources Council*, 490 U.S. 360, 374 (1989) (“If there remains ‘major Federal action[n]’ to occur, and if the new information is sufficient to show that the remaining action will ‘affec[t] the quality of the human environment’ in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.”).

Because the FEIS analyzed only the proposal of using the HDD method to cross the Hudson River, FEIS at 2-36, an alternative crossing plan would constitute a change to the project requiring supplemental environmental review. FERC would be required to prepare an Environmental Assessment to determine whether the proposed alternative crossing method was a “substantial change[] in the proposed action” and what different environmental concerns that change would cause. As the FEIS acknowledges, if the proposed HDD crossing of the Hudson fails, the crossing at the proposed location would require open-cut trenching methods that would have substantial adverse impacts. The FEIS expressly declined to evaluate the impacts of an open-cut crossing and their potential mitigation based on “the potential to avoid these effects using the HDD method.” FEIS at 3-21, 3-45. An alternative using an open-cut crossing method would involve different, potentially significant adverse impacts to the environment, including aquatic and benthic habitat and vegetation, turbidity and re-suspension of contaminated sediments, water quality and water chemistry, bank stability and erosion, aquatic

organisms, endangered species, fisheries, and essential fish habitats.<sup>37</sup> These and other potential impacts of the new waterbody crossing plan must be identified, analyzed, and mitigated through preparation of an environmental assessment and, if necessary, an SEIS before FERC approves the use of such a method for the AIM project's Hudson River crossing. Failure to conduct this additional environmental review will be a violation of NEPA; the Commission must take the requisite "'hard look' at environmental consequences," *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989), prior to approving this "major federal action significantly affecting the quality of the human environment, 42 U.S.C. §4332(2)(C). See *Env'tl. Defense Fund v. Marsh*, 651 F.2d 983, 991, 1005-06 (5th Cir. 1981) (requiring the preparation of an SEIS where there were major changes in the design and economic projections for the waterway project that constituted "major federal actions significantly affecting the quality of the human environment").

Petitioners respectfully requests that Environmental Condition 16 be revised to reflect the Commission's NEPA obligations as follows:

In the event of an unsuccessful HDD at the Hudson or Still Rivers, Algonquin shall file with the Secretary a plan for the crossing of the waterbody. This shall be a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction. **FERC Staff shall conduct a supplemental environmental review of the plan, including, if the crossing may have significant adverse environmental impacts not evaluated in the FEIS, preparation of a Supplemental Environmental Impact Statement ("SEIS") analyzing those potential environmental impacts of the plan.** Algonquin shall file this plan concurrent with the submission of its application to the U.S. Army Corps of

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<sup>37</sup> See, e.g., FEIS at ES-4-5, noting that using the HDD method would "avoid in-stream disturbance" of the waterbodies, "avoid direct effects to the Hudson River Important Bird Area, aquatic habitats, and adjacent riparian habitats," "have minimal, if any, adverse effects on essential fish habitat or managed species," and "have no effect on the shortnose surgeon [and] Atlantic sturgeon."

Engineers and other applicable agencies for a permit to construct using this alternative crossing plan. The Director of OEP must review **the plan and the supplemental environmental review**, and approve this plan in writing before construction of the alternative crossing.

**H. The Commission Erred in Concluding That the AIM project Will Not Result in Increased Safety Impacts at the Indian Point Nuclear Facility.**

The Commission must consider project safety both as part of its review under NEPA and the public interest analysis under Section 7 of the Natural Gas Act. *See Washington Gas Light & FERC*, 532 F.3d 928 (D.C. Cir. 2008)(remanding certificate based on the Commission's failure to show that project would be safe). The Commission has an independent obligation to review safety issues, and cannot rubber-stamp findings of another agency. *See, e.g., Bangor Hydro v. FERC*, 78 F.3d 659 (D.C. Cir. 1996)(vacating Commission decision adopting mandatory prescription from Department of Interior without reviewing evidentiary support).

Here, the Commission's actions relating to Indian Point are deficient on three counts. First, the FEIS failed to address expert testimony submitted that disputed Entergy's Safety Analysis and the NRC's Confirmatory Report. Second, the Certificate Order fails to accurately describe the dangers associated with the Indian Point facility and lacks substantial evidence to support its cursory conclusion that the AIM project will not affect the safety of the Indian Point reactor. Third, notwithstanding its obligation to ensure safety, the Commission improperly relied on the NRC's findings when they have been subject to challenge, and the NRC's position continues to evolve.

**1. The FEIS failed to address Mr. Kuprewicz's and Mr. Blanch's expert report.**

Section 1502.24 of the CEQ regulations emphasizes that "agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in

the environmental impact statements.” An agency must evaluate the scientific evidence presented, respond to opposing viewpoints and provide reasons for rejecting an expert’s analysis. See *Protect Our Communities v. Salazar*, Case No. 12-cv-2211 (S.D. Cal. 2013)(finding that agency’s consideration of expert opinions by petitioners along with agency experts satisfied NEPA). Failure to address expert opinions will result in invalidation of the agency’s EIS. See *Western Watersheds v. Kraayenbrink*, 632 F.3d 472, 492 (9th Cir. 2010)(remanding EIS where BLM failed to address concerns about project’s impacts raised by its own experts as well as other federal and state agency experts); *Lands Council v. McNair*, 537 F.3d 981, 1001 (9th Cir. Idaho 2008)(reaffirming that agency “must acknowledge and respond to comments by outside parties that raise significant scientific uncertainties” with reasonable support).

The Commission’s FEIS devoted a scant two paragraphs to safety issues at Indian Point. Relying primarily on Entergy’s Safety Analysis and the NRC’s review, the FEIS concluded that the AIM Project poses no increased risks to IPEC and there is no significant reduction in the margin of safety. See FEIS at 4-235-245. The FEIS does not mention any of the serious safety hazards discussed by Mr. Blanch, or reports submitted by Mr. Kuprewicz on November 3, 2014 and January 2015 (attached in Exhibit 3) which questioned Entergy’s and the NRC’s assumption that a pipeline rupture could be addressed in a three minute time-frame. Mr. Kuprewicz explained that:

This assumption is unreasonably optimistic, ignoring both systemic dynamics (compressor and pipeline system rupture dynamics/interactions that mask remote rupture identification), uncertainty in the SCADA monitoring that will further delay remote recognition of a pipeline rupture and control room operator confusion and related human factors that will easily further delay control room response actions of a pipeline rupture, all of which will work to

river response well beyond the assumed three minute time. In addition the 3-minute assumption disregards initial release and subsequent blow down times dictated by the law of thermodynamics related to pipeline rupture, even large 42-inch transmission pipelines.<sup>38</sup>

Accordingly, Mr. Kuprewicz urged that the Analysis “more thoroughly assess the impact of the pipeline rupture on the Indian Point facilities.”

Mr. Kuprewicz’s first set of comments were submitted on November 3, 2014 – more than two months before the Commission issued the FEIS. Mr. Blanch’s comments were filed in September 2014 in response to the DEIS. The failure of the FEIS to address either expert’s comments on safety merely because they differ from the applicant’s preferred approach, or to accept his advice to perform additional safety analysis undermines the scientific integrity of the Commission’s environmental review and violates the CEQ regulations.

## **2. The Commission’s conclusions are not supported by substantial evidence.**

Given the questions raised by Mr. Kuprewicz and Mr. Kuprewicz, the Commission could not rationally assure the safety of the pipeline, as was the case in *Washington Gas Light v. FERC*, 532 F.3d 928. There, the D.C. Circuit remanded a Commission order which relied on safety assumptions unsupported by substantial evidence in approving an LNG project. A local utility challenged the Commission’s findings, arguing that the influx of LNG would cause its system to suffer severe leakage, and that any measures to reinforce its system could take up to a decade to implement. Notwithstanding the utility’s protest, the Commission declared that there was ample time for the utility to take corrective measures that would allow it to safely accept the liquefied gas by the time the LNG facility was constructed. The court disagreed, and vacated the Commission order finding that there was no substantial evidence to support

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<sup>38</sup> Kuprewicz Report at 8.

the Commission's assumption that the utility fix its system in a timely manner so as to avoid any safety risks when the LNG facility came online.

As in *Washington Gas*, here the Commission made assumptions about the safety of the Indian Point plant that are likewise unsupported by the record. Mr. Kuprewicz reviewed the Entergy Report and found a key deficiency that would jeopardize public safety: the report made a critical – and unrealistic assumption of a three minute response time to identify and close gas mainline response valves in the event of a rupture.<sup>39</sup> Mr. Kuprewicz went on to explain that the three-minute assumption “disregards initial release and subsequent blow down times dictated by the law of thermodynamics” and noted that “history is filled with clear examples of gas transmission pipeline rupture events generating high heat flux events well past an hour.”<sup>40</sup> Accordingly, Mr. Kuprewicz strongly recommended a more thorough independent assessment of the impact of pipeline rupture on the Indian Point facilities.

Since that time, additional information has emerged. The NRC's response to Mr. Blanch's FOIA request in February 2015 shows that the NRC improperly relied on the ALOHA model, which is prohibited for a pipeline broken in the middle and leaking at both ends.<sup>41</sup> The NRC conducted a formal petition review call (transcript attached as part of Exhibit 3), and could not substantiate the basis for the three-minute rule other than citing the Algonquin Resource Report 11. Throughout February and March 2015, various legislative representatives contacted the Commission to bring these new developments to its attention, urging the Commission not to rush its decision and to

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<sup>39</sup> Kuprewicz Letter at 8, submitted on November 21, 2015.

<sup>40</sup> *Id.*

<sup>41</sup> See Exhibit 3, Statement of Facts at 2.

undertake a transparent, independent risk assessment.

Yet, just as the Commission completely ignored safety and gas leakage issues raised by the local utility in *Washington Gas*, so too here, the Commission ignored pipeline safety experts, the NRC's hearing reconsidering its position and congressional input warning it of these problems. As in *Washington Gas*, the Commission cannot reasonably assure the safe operation of the project in the face of overwhelming evidence that suggests otherwise. Accordingly, the Commission's order must be vacated on rehearing, and the Commission must either deny the certificate (if it cannot assure project safety) or alternatively, undertake a robust independent analysis, or await more definitive resolution of these issues by the NRC.

3. **The Commission cannot simply accept, without independent review, the NRC's conclusions which have now been called into question by new evidence.**

The Commission may claim that safety of the nuclear facility rests with the NRC, rather than the Commission. Even so, the Commission has an independent obligation to ensure safe operation – and it cannot blindly accept the NRC's conclusion that a breach or explosion of the 42-inch AIM pipeline would not adversely impact safe operation of the Indian Point facility – particularly when those conclusions have been the subject of vigorous challenge, and are still evolving.

The D.C. Circuit's ruling in *See Bangor Hydro v. FERC*, 78 F.3d 659 is instructive. There, the Commission was directed by statute to require a hydropower license applicant to construct fishways at a dam if prescribed by the Department of Interior and appropriate for fish protection. Accordingly, the Commission granted a license conditioned on the applicant's construction of fishways. The applicant challenged the Commission order, arguing that the record lacked any evidence showing that fishways were needed to protect the fish population. The Commission responded that it was



bound to accept Interior's recommendation. The court disagreed, holding that the Commission had an independent obligation to ensure that its entire order – including the fishway condition – was supported by substantial evidence, even if the condition was included at the recommendation of another agency. The court went on to find that the record was void of any evidence to show that fish passages were needed and thus, vacated the Commission order.

As in *Bangor Hydro*, irrespective of the NRC's conclusions, the Commission has an independent obligation to support its certificate with substantial evidence. Here, also as in *Bangor Hydro*, the record is lacking in evidence that would allow the Commission to conclude, based on substantial evidence that the Indian Point project continue to operate safely once the AIM pipeline is built. Accordingly, the Commission must vacate its order and deny the certificate or alternatively, await a ruling from the NRC resolving these issues.

**I. The Commission Erred in Concluding That the AIM project Will Not Result in any Disproportionately High or Adverse Environmental and Human Health Impacts on Minority or Low-Income Communities, or Indian Tribes.**

The Commission failed to consider the disparate health related impacts to environmental justice communities and did not provide the meaningful involvement to these impacted communities that is required in the NEPA decision-making process.

**Environmental Justice Requirements**

Low income communities and communities of color have historically been overburdened as a result of air pollution, water pollution and the disproportionate locating of undesirable land uses in those communities. Executive Order 12898, issued on February 11, 1994, outlined Federal policies to address those environmental justice issues, and CEQ released guidance in 1997. Since 2003, Environmental Justice Policy,

CP-29, has governed NYSDEC actions during review of actions under the New York State Environmental Quality Review Act.

The federal and state guidance and policy define environmental justice as the "fair treatment" and "meaningful involvement" of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.<sup>42</sup>

"Fair treatment" means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental and commercial operations or policies.

"Meaningful involvement" means that (i) all people should have an opportunity to participate in decisions about activities that may affect their environment and/or health; (ii) the public's contribution can influence the regulatory agency's decision; (iii) their concerns will be considered in the decision making process; and (iv) the decision makers seek out and facilitate the involvement of those potentially affected.<sup>43</sup>

### **The City of Peekskill is an Environmental Justice Community**

In 2010, the City of Peekskill prepared a Community-Based Environmental Justice Inventory (Environmental Justice Inventory).<sup>44</sup> The City inventory reviewed, identified, and analyzed, the following community characteristics:

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<sup>42</sup> NYSDEC Commissioner Policy 29 "Environmental Justice Policy," March 19, 2003.

<sup>43</sup> U.S. EPA.  
<http://compliance.supportportal.com/link/portal/23002/23009/Article/32790/How-Does-EPA-define-Environmental-Justice>

<sup>44</sup> The Environmental Justice Inventory was funded in part from a grant from the New York State Department of Environmental Conservation, And prepared with the assistance of that agency's Office of Environmental Justice.

- a. Areas where a number of residents are living below the poverty line and/or where minorities comprise more than 51.1 percent of the population
- b. Current environmental burdens on Peekskill and surrounding areas
- c. Comparative health status and adverse health effects in Peekskill

The Environmental Justice Inventory found:

- a. Peekskill has a population of around 25,000, with approximately 47% of its population being non-white and approximately 22% being Latino (of any race).
- b. Neighborhoods within a 12.5-mile radius of downtown Peekskill are home to at least 2 hazardous waste handlers, 7 hazardous waste facilities, 19 solid waste facilities, 27 major and minor air polluters, 87 industrial surface water sites, 20 municipal surface water sites, 15 toxic release facilities, 47 hazardous waste handlers, and 23 toxic release sites. The majority of the toxic release sites, hazardous waste, solid waste facilities and wastewater facilities are located in predominantly African-American communities.
- c. Health data comparing Peekskill to surrounding communities indicates that Peekskill has unusually high rates of asthma, including emergency room visits and hospitalizations, respiratory cancers, death due to cardiovascular disease, and high incidents of low birth weight.

**West Roxbury is an Environmental Justice Community.**

In addition to Peekskill, West Roxbury was also recognized as an environmental justice community in the DEIS at 315. As the DEIS describes, in Massachusetts:

Environmental justice populations are those segments of the population defined as neighborhoods (U.S. Census Bureau census block groups) that meet one or more of the following criteria:

- ☐ the median annual household income is at or below 65 percent of the statewide median income for Massachusetts;
  - ☐ 25 percent of the residents are minority;
  - ☐ 25 percent of the residents are foreign born; or
  - ☐ 25 percent of the residents are lacking English language proficiency.
- According to the 2010 U.S. Census data, 11.4 percent of the Town of Dedham's population in Norfolk County is located in environmental justice block groups that meet the 25 percent minority criteria listed above. Of the 2.9 miles of the West Roxbury Lateral in Dedham, about 1.4 or 47 percent would cross through a portion of one of these groups. **In Suffolk County, the Project would pass through environmental justice block groups in West Roxbury that meet two of the above four criteria (25 percent minority, below the 65 percent of the median income, or a combination of the two). All 1.7 miles (100 percent) of the AIM Project pipeline in West Roxbury would cross through these groups and/or traverse along the outer edges of these groups.**

DEIS at 315, emphasis added.

### **Final EIS Analysis of Environmental Justice Issues**

Environmental justice issues are analyzed in Section 4.9.10 of the Final EIS. That analysis is clearly deficient with regard to both the consideration of health effects and the involvement of the impacted communities.

The Final EIS notes that the Council on Environmental Quality (CEQ)<sup>45</sup> called on federal agencies to actively scrutinize the following issues with respect to environmental justice:

1. The *racial and economic composition* of affected communities;
2. *Health-related issues* that may amplify project effects on minority or low-income individuals; and
3. *Public participation* strategies, including community or tribal participation in the process.

*Racial and Economic Composition.* Regarding the composition of affected communities, the FEIS identifies two census block groups<sup>46</sup> with minority populations greater than 51.5%<sup>47</sup> that approximately 940 feet of the pipeline would cross,. Those crossings would occur on either side of the point where the pipeline crosses Route 9A near MP 5.8.

Although the Final EIS concludes that the work within those areas "would not be located through neighborhoods," the attached maps and other data indicate that the construction would take place approximately 50-75 feet from homes in Peekskill and Cortlandt neighborhoods.

*Health Related Issues.*

The AIM Project would have adverse impacts on neighborhoods within Peekskill that already have a disproportionately high number of hazardous facilities and the air

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<sup>45</sup> Council on Environmental Quality, *Environmental Justice, Guidance Under the National Environmental Policy Act*, Executive Office of the President, Washington, D.C. 1997.

<sup>46</sup> Those are Census Tract 141, Block Group 4 and Census Tract 141, Block Group 3 with 57.3% and 53.9% minority populations, respectively.

<sup>47</sup> EPA Region 2 guidance for Environmental Justice areas.

and water pollution associated with the operation of those facilities. The operation of a 'pigging' station in Buchanan and the operation of an expanded M&R station and its associated systems in Peekskill would significantly increase the local residents exposure to air pollution. In addition to everyday impacts from the gas pipeline, M & R and pigging stations, and their infrastructure systems, there will be adverse impacts associated with the construction of the pipeline including temporary increases in dust, noise, and traffic. The Final EIS argues that "These impacts would occur along the entire pipeline route and in areas with a variety of socioeconomic backgrounds."

While the adverse environmental impacts would occur along the entire pipeline route, the Commission does not provide sufficient analysis to effectively determine if the project would result in a disproportionately high and adverse impact on these minority and low-income populations. No analysis of the specific health impacts on residents of the environmental justice areas – including Peekskill and West Roxbury -- was conducted. The Environmental Justice Inventory found a number of adverse health impacts already in the area. Where communities are already subject to higher levels of environmental assaults, the added degradation of air quality, increased noise and increased traffic impacts must be seriously considered. The differential impacts on high pollution environmental justice areas and on other areas along the pipeline route must be considered. It was not.

#### *Public Participation.*

The Commission staff's public outreach efforts failed to meet the requirements of the CEQ guidance - there was no "meaningful involvement" proposed for environmental justice communities. The Final EIS notes that "In its comments on the draft EIS, the EPA recommended some non-traditional communication techniques to improve success in

contacting some of the low income and minority communities along the proposed Project route" and that in response, Algonquin has agreed to prepare fact sheets in Spanish to be posted on the Project website and would prepare notices regarding public meetings and, in the future, notices regarding construction information in Spanish for the identified environmental justice communities.<sup>48</sup>

This effort, to acknowledge the actual legal requirements of the review after the close of the public record, is antithetical to the purpose of environmental justice policies.

In fact, there were minimal, if any, efforts to meet environmental justice obligations. The populations of people in the pathway of the proposed pipeline expansion, and those folks specifically identified by the policy, such as non-white and Latino populations, were not "sought out" in any manner. Notices about the project were not provided in Spanish. No notices were included in any publications, social networking, or broadcast media that serve the African-American, Latino or other minority populations. There was no involvement of City agencies that serve members of those populations like the Peekskill Housing Authority, the Youth Bureau or the Human Relations Commission. Anecdotal evidence would suggest that the vast majority of non-white and Latino households did not know about the proposed pipeline during any of the comment periods and are still unaware of this proposed project.

The Final EIS reports that FERC conducted a public scoping meeting in the Town of Cortlandt, met with the officials in the City of Peekskill on at least five occasions to discuss the AIM Project, and that all landowners received information about the project

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<sup>48</sup> West Roxbury residents received a mailer from Algonquin in December 2014 which many found was misleading, as described in a response sent to Spectra. In addition, Spectra's response to questions from West Roxbury residents were not helpful. See Attachment 8 (West Roxbury questions to Spectra and responses, and response to mailer).

and were invited to attend information meetings by Algonquin and public meetings by the FERC. Although the Final EIS asserts that there were "at least five meetings" between Algonquin and Peekskill city officials, no specific information is provided regarding the outreach efforts undertaken nor is any information provided about the diversity of the residents that attended the meetings. None of those actions for public outreach undertaken during the NEPA review remedies the omission of involvement of the environmental justice community in this project. The only way that FERC can seek to remedy this situation is by granting the request for a rehearing.

## **Conclusion**

The summary conclusion regarding environmental justice in the Final EIS presents no evidence that the public's contributions had any "influence [on] the regulatory agency's decision" or that "their concerns" were "considered in the decision making process." In fact, the Final EIS acknowledges what should have been done to make efforts to reach all of the impacted communities - and the Final EIS was issued after that process was concluded. The absence of any meaningful notice deprived the public of an opportunity to comment. The absence of and meaningful analysis of the AIM Project's impact on population health and other environmental justice issues failed to provide the requisite "hard look" at the proposed pipeline's impact on minority populations. A full analysis of alternative routes and the differential health impacts needs to be provided as part of a rehearing process. As a result, this request for rehearing must be granted. The guidance and policies of both the federal and state governments provide clear demographic analysis parameters for impacted populations and requires additional outreach steps be taken when those parameters exist. Without explanation, the policy was simply not followed by FERC. The agency is not permitted



to enact environmental reviews in this manner. Thus, rehearing must be held to correct those lapses.

**J. The Commission Failed To Support Various Findings of Fact With Substantial Evidence as Required by Section 717r(a) of the Natural Gas Act.**

**1. The Commission's conclusion that the compressor station will not adversely impact air quality is unsupported.**

The FEIS findings that the compressor stations will not adversely impact air quality are unsupported by substantial evidence. Algonquin has made public statements about its AIM project giving the false impression that, because of its replacing older compressor units with new compressor units, the project will reduce emissions at the compressor stations.<sup>49</sup> Such statements are intended to quell protest by impacted neighbors of the compressor stations. These statements are misleading and inaccurate.

The 2013 actual emissions data reveal that the Southeast Compressor Station released less CO than will occur under the NYDEC's draft air quality permit going forward. Specifically, Southeast in 2013 emitted less than 7.5 tons of CO, whereas the draft permit allows the compressor station to emit over 52 tons of CO. The Commission

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<sup>49</sup> See, e.g., Spectra Energy Corp comments to the New York Energy Highway Request for Information, available at <http://www.nyenergyhighway.com/Content/documents/51.pdf>.

stations.<sup>50</sup> Such statements are intended to quell protest by impacted neighbors of the compressor stations. These statements are misleading and inaccurate.

The 2013 actual emissions data reveal that the Southeast Compressor Station released less CO than will occur under the NYDEC's draft air quality permit going forward. Specifically, Southeast in 2013 emitted less than 7.5 tons of CO, whereas the draft permit allows the compressor station to emit over 52 tons of CO.

The Certificate Order does not consider other issues related to air quality – such as contribution of diesel and gasoline engine gas and particle to local and state air quality during the West Roxbury Lateral construction phase of the project in the 2015 and 2016 “ozone seasons.” Ultrafine particles from diesel construction equipment contribute emissions are associated with increases in respiratory diseases (such as asthma) and hospitalizations, especially for at risk populations such as children and the elderly. The Commission did not consider these impacts on residents near the West Roxbury lateral.<sup>51</sup>

**2. The Commission's conclusion that the project will not diminish property values or increase the cost of homeowners' insurance is unsupported by substantial evidence.**

In *Constitution Pipeline*, the Commission acknowledged the possibility that placement of a pipeline on a property might increase the cost of homeowner's insurance. 149 FERC ¶61,199 (2014) at 94-98. Thus, the Commission directed

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<sup>50</sup> See, e.g., Spectra Energy Corp comments to the New York Energy Highway Request for Information, available at <http://www.nyenergyhighway.com/Content/documents/51.pdf>.

<sup>51</sup> The record includes the GZA Report, commissioned by Spectra, addressing health and safety aspects of the West Roxbury lateral. The report relies on several erroneous assumptions, such as addressing a single incident rather than probability of fly-rock incidents, and ignoring cumulative impacts. A summary of the deficiencies in the GZA Report is attached as Exhibit 4.

Constitution to monitor the impact of the project on property insurance rates for a two year period following installation of the pipeline. Here, notwithstanding comments advising the Commission about the project's dangers, and potential to devalue homes, the Commission failed to fully consider these impacts and provide adequate mitigation.

3. **The Commission's conclusions that the AIM expansion in the Blue Mountain Reservation and Reynolds Hills would not substantially alter local wildlife populations, including 'special status species' and that no additional surveys are necessary within those properties, are not support by substantial evidence.**

The wetlands and the Dickey Brook waterway on the Reynolds Hills property support vegetation typically adapted to live in saturated soil conditions. They provide food, shelter, drinking water and breeding grounds for many species that are important for an intact ecological system and are a source of significant biodiversity. In describing the adjacent Blue Mountain Reservation, a 1,538-acre county-owned park, the Final EIS states that:

The reservation is also classified as a biodiversity hub in the Croton-to-Highlands Biodiversity Plan, because it provides an area of high-quality wildlife habitat in a densely developed area for many wildlife species, including amphibians and reptiles, such as spotted salamanders, gray tree frogs, wood frogs, garter snakes, milk snakes, and the black rat snake (Miller and Klemens, 2004). The mixed hardwood forest also provides habitat for many forest-dwelling bird species

However, the Final EIS also states that

Because Algonquin would largely make use of its existing rights-of-way and would adhere to its SPCC Plan, E&SCP, and other measures discussed in this EIS, we conclude that Algonquin's proposed pipeline facilities would not substantially alter local wildlife populations.

The information in the FERC *Final Survey Reports* regarding protected species has been marked privileged and confidential, so it has not been made available for review and public comment. This has prevented meaningful public review of a critically

important issue – protection of species, particularly threatened, endangered, or species of special concern.

On December 31, 2014, a preliminary study of the areas east of Route 9 between approximately MP 5.3 and MP 8.0<sup>52</sup> was carried out by Dr. Erik Kiviat, Director of Hudsonia, Ltd. Dr. Kiviat is an endangered species expert and certified wetlands scientist<sup>53</sup>. He noted:

*Potentially Occurring Rare Flora and Wildlife*

All wild native species of organisms and their habitats are important to conserve. This biological diversity (biodiversity) is an important current and potential resource for human use, plays important roles in the maintenance of other natural resources such as the quality of air, water, and soil, and provides important information about conditions in nature (indicator species). Each state has a list of Species of Greatest Conservation Need (SGCN) identifying those animals that need conservation attention; this list is created and updated by the New York State Department of Environmental Conservation (DEC). The SGCN list includes animals listed as Endangered, Threatened, or Special Concern, as well as other species not so listed. Each state also has a program that ranks and tracks rare plants; ours is called the New York Natural Heritage Program (NHP). Plants are ranked on a scale of statewide rarity from S1 (the rarest) to S5 (the most common); plants ranked S1, S2, and S3 are of conservation concern. State-listed Endangered and Threatened species have legal protection in New York. Protection of Special Concern species and rare plants is limited and depends on the species. However, all of these species not currently listed as Endangered or Threatened have the potential to become endangered if they are not conserved, and the first step in conservation is to identify which species are at risk of negative impacts from development projects such as the proposed pipeline expansion.

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<sup>52</sup> See *Preliminary Biodiversity Assessment of the Algonquin Gas Pipeline at Reynolds Hill and Blue Mountain Reservation, City of Peekskill and Town of Cortlandt, Westchester County, New York*, Erik Kiviat, January 12, 2015.

<sup>53</sup> Dr. Kiviat has studied the plants and animals of the region for 40 years and has authored or co-authored 80 publications and 200 technical assistance reports on wetland ecology, rare species conservation, habitat ecology, introduced species, the Hudson River, and other subjects. Erik is the author of *The Northern Shawangunks: An Ecological Survey*; *Hudson River East Bank Natural Areas*; and *Hackensack Meadowlands, New Jersey, Biodiversity: A Review and Synthesis*. He is a Certified Wetland Scientist. See <http://hudsonia.org/about/people/>.

Exhibit 4 (attached) compares the observations of Dr. Kiviat regarding species of special concern to the information in Table 4.7.1-1 and in the accompanying text in the Final EIS. The discrepancies between the information provided in the Final EIS and the first hand observations by Dr. Kiviat indicate that additional studies of vulnerable species should be performed at the very minimum. No decision regarding potential threats from the pipeline project can be established until all species of special interest have been identified - therefore the conclusions that the AIM expansion in the Blue Mountain Reservation and Reynolds Hills would not substantially alter local wildlife populations - including 'special status species' - and that no additional surveys are necessary within those properties, are not supported by substantial evidence.

**K. The Commission Cannot Confer Eminent Domain Powers on Algonquin Regarding New York Parkland Until a Full Environmental Review has been Completed.**

As a matter of law, Westchester County cannot convey any property within the Blue Mountain Reservation to Spectra without first alienating the parkland under State law or without having the property duly and properly condemned under eminent domain authority granted by the Commission. During the gas pipeline approval process, Spectra's submission makes clear its intent to conduct pipeline replacement work in Blue Mountain Reservation that exceeds the scope of the current easements it has with Westchester County for use of County property, and would require use of eminent domain power granted by the petition. However, the Commission failed to consider many pieces of information and many pieces are missing from the record - including wetlands, biodiversity, endangered plant and animal species, loss of recreational uses and others - that are necessary for the valuation of the County owned Reservation property and for any actions regarding future use.

## 1. Overview of the Blue Mountain Reservation and Pipeline Easement

The Reservation is an incredibly valuable gem in the Westchester County Park System. It's history traces back to 1926, when the County Parks Commission noted:

*This reservation will comprise approximately 1500 acres and is one of the finest tracts of picturesque, rugged woodland in the County. It includes three small lakes, a large brook and several smaller ones, and if approved will help to supply the increasing public demand for camping places.*<sup>54</sup>

In the 1950s and 1960s, the current easements encumbered the parkland, identifying the route and limiting the use on the property. The permanent easements are for 3 feet on each side of centerline of the pipeline. The easement language specifically states that:

*the Grantee shall not make substantial deviation from the above described line without first obtaining consent of grantor.*<sup>55</sup>

The easements also include specific obligations on the pipeline company to essentially pay or restore any damage it creates. In each easement, Paragraph 9 contains the same language:

*And Grantee shall repair or pay for all such damages caused by or arising out of or in connection with its activities in maintaining, operating, altering or removing said pipeline subsequent to the final Completion of the original construction and installation of the same.*

The maintenance sections of the easements limit such work to 75 feet. The right-of-way both limits the work that can be done in the right-of-way in the Reservation and obligates the Grantee to repair or pay for all damages it causes.

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<sup>54</sup> Westchester Park Commission Annual Report, January 4, 1926 at page 71.

<sup>55</sup> The 1952 easement for the 26-inch Algonquin Pipeline can be found at liber. 5118 page 447. The 1964 easement for the 30-inch Algonquin Pipeline can be found at liber. 6459 page 389.

## 2. **Algonquin Cannot Meet Its Obligation Under the Existing County Easements**

Despite the issuance of the Certificate Order, there remain many unknowns that make any Westchester County transaction with the company impossible. On January 14, 2015, Hudsonia, Ltd. presented an analysis and report to the Westchester County Board of Legislators Labor, Parks, Planning & Housing Committee, that demonstrates that there are problems with the FERC record - including misidentification of wetlands that are located in the Reservation and problematic analysis of endangered, threatened, and species of special concern issues. The wetlands issues are the subject of Clean Water Act permit applications currently pending before the Department of Environmental Conservation.<sup>56</sup>

The wetlands issues are relevant because of the evident overlap between Spectra's proposed new work areas (outside of the right-of-way) and the location of regulated wetlands (in and adjacent to the right-of-way). Two wetland areas inside the Reservation that are likely subject to DEC wetlands jurisdiction are slated for large scale and widespread pipeline construction impacts because they are in the right-of-way pathway.<sup>57</sup> The disturbance of the wetlands, the hydrogeology (both on and off-site), the

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<sup>56</sup> See NYSDEC Permit Application ID: 3-9903-00099/00002 - Freshwater Wetlands, Application ID: 3-9903-00099/00003 - Part 401 Water Quality Certification, Application ID: 3-9903-00099/00004 - Stream Disturbance, Application ID: 3-3730-00060/00013 - Air Title V - Southeast Compressor Station, Application ID: 3-3928-00001/00027 - Air Title V - Stony Point Compressor Station. The biodiversity issues have been re-submitted to the United States Fish and Wildlife Service on March 4, 2015. The failure to properly identify wetlands was been raised with the United States Army Corp of Engineers and NYSDEC and Reynolds Hills has requested the each agency to duly and properly delineate the Reynolds Hills and Blue Mountain Reservation wetlands as required by federal and state law and regulation.

<sup>57</sup> "Preliminary Biodiversity Assessment of the Algonquin Gas Pipeline at Reynolds Hill and Blue Mountain Reservation, City of Peekskill and Town of Cortlandt, Westchester County, New York" by Erik Kiviat, PhD ("Hudsonia") at page 5.

forest, the biodiversity, and the general topography will markedly and permanently impact Blue Mountain Reservation. The right-of-way construction will also permanently change and impact a wetlands complex in the Reynolds Hills property adjacent to the Reservation (also subject to Spectra's failure to identify DEC jurisdictional wetlands).<sup>58</sup> In addition, there may be Native American archeological and historical resources that would be impacted by the proposed construction in both areas, and Tribal representatives are seeking to explore and analyze the entire right of way this Spring.<sup>59</sup>

The record, on which the FERC decision to issue a certificate is based, creates a significant problem. The lack of a complete record identifying all of the issues and the values - biological, historical, aesthetic, recreational, or otherwise - prevents a full understanding by Westchester County of the true costs of repairs and payment for any damages caused by the pipeline work. Spectra had ample time to properly complete the record and to meet its review obligations under the National Environmental Policy Act. Without meeting these clear legal requirements, it is unable to meet its obligations to the County under the existing easements and it now has no basis to properly value the significant amount of parkland it will destroy and/or permanently change during the pipeline construction and expansion process.<sup>60</sup>

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<sup>58</sup> Hudsonia at page 5.

<sup>59</sup> There has been no opportunity for the review or analysis by Native American Tribal representatives, as is required.

<sup>60</sup> Further, the proposal to merely re-seed the construction areas as "restoration," without regard to substantial botanical considerations such as preserving native species, decreasing invasive species, and limiting wetland disruption and destruction during construction, cannot be said by any measure to compensate for the construction impacts.



### **3. Westchester County and the New York State Legislature Cannot Approve Parkland Alienation for the Expansion of Spectra Work Beyond the Right of Way.**

In New York, the Public Trust Doctrine addresses changes in the use of parkland. The doctrine, and many years of case law, make clear that “any conveyance” of parkland, especially that of the right to construct, use and maintain a pipeline in an over mile long right-of-way must meet parkland alienation requirements.<sup>61</sup> Further, the scope and scale of the impact to Blue Mountain Reservation prohibits consideration of the project for any of the very limited exceptions to the full parkland alienation requirements. The doctrine requires that any attempt to alter the use of parkland, like those contemplated by Spectra (whatever it calls the property interest whether a revocable license or an easement) must be subject to an act of the New York State Legislature.<sup>62</sup> In addition, the alienation process requires compliance with the State Environmental Quality Act. This doctrine, and its implementation in countless situations involving changes to parkland in New York demonstrate the State’s commitment to the value of its parklands like Blue Mountain Reservation. The need for the extraordinary involvement of the State legislature is consistent with the views and comments about Blue Mountain Reservation made over 80 years ago by the then County Parks Commission.

New York State law prohibits Westchester County from entering into any conveyance with Spectra or any other company for any conveyance of Blue Mountain

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<sup>61</sup> The term conveyance is expansive, as is “any conveyance.” For example, the Real Property Law of New York defines conveyance as “every instrument, in writing, except a will, by which any estate or interest in real property is created, transferred, assigned, or surrendered.” See Section 240(1). Similarly, the Courts in New York have had a similarly expansive reading of the term as the public trust doctrine for parkland alienation has been interpreted over the years.

<sup>62</sup> Handbook on the Alienation and Conversion of Municipal Parkland in New York <http://parks.ny.gov/publications/documents/AlienationHandbook.pdf>.

Reservation without first meeting the parkland alienation requirements. Any action by Spectra to acquire conveyances is similarly restricted. The current easements restrict work areas and require repair or payments for damages associated with work on the pipeline. The County, which holds the Reservation in trust for the public, has a significant obligation to protect it. The proposed construction would extend over a mile within the Reservation and would result in substantial damage and destruction that would be permanent and not repairable<sup>63</sup>. Based upon the incomplete record, the County (or any other entity) cannot determine the value the right-of-way as it is obligated to do.

**4. The Commission Should Not Issue an Order to Proceed or Grant Eminent Domain Powers to Spectra for the Expansion of Spectra Work Beyond the Right of Way in New York Parkland Without Reopening the Record and Reconsidering the Issues.**

Spectra's actions in the review of the gas pipeline proposal also have the effect of preventing it from exercising eminent domain powers at this time. The Blue Mountain Reservation in Westchester County is an asset of untold value to the residents of Westchester County. Even in the best of circumstances it would be difficult to ascertain a financial value for it given the aesthetic, recreational, and environmental values it serves. These ecological values are significant - biodiversity, threatened or endangered species, and wetlands - as is the need for a viable and credible plan to preserve, protect or restore the Reservation. The exercise of eminent domain for AIM gas pipeline expansion, approved by the Commission this month, would require that this difficult valuation task be done.

The actual impacts to the parkland from the proposal would need to be fully understood. The efforts of Spectra to analyze and understand the numerous impacts to

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<sup>63</sup> The company has not even proffered any restoration or conservation plan commensurate with the significance of the park.

this parkland have fallen short. They do not have a record upon which to fully understand the impacts to the park.

The eminent domain process, under FERC authority, for any such conveyance of Blue Mountain Reservation property cannot be completed. Eminent domain requires that property only be taken with just compensation. Based upon the record, the company cannot meet that significant Constitutional requirement. There is no basis to reach a reasonable or rational valuation of the Reservation lands. Thus, the requirements of eminent domain cannot be met and should not be granted.

**L. The Commission erred by failing to hold a hearing to resolve disputed issues of material fact.**

The Commission must hold a hearing to resolve disputed issues of material fact. *Cajun Electric v. FERC*, 298 F.3d 173, 177 (D.C. Cir. 1994). Here, one party, William Huston, requested a hearing, finding that Mr. Huston's issues could be resolved on the record.

Yet the record overflows with issues of materials fact, ranging from whether AIM will support gas export to whether the project is overbuilt to dozens of disputes over the extent of environmental harm. Perhaps the most serious factual dispute concerns the differing opinions over the safety of Indian Point, with both Mr. Kuprewicz and testimony before the NRC documenting safety risks, while a study by Entergy, Indian Point's owner concluded that the AIM project would not increase risks. The record also contains disputed facts as to segmentation, with Mr. Kuprewicz presenting evidence that Algonquin segmented the pipeline even though Algonquin claims otherwise. The Commission erred by failing to set these factually disputed issues for hearing.

## **VI. REQUEST FOR STAY**

The Commission reviews requests for a stay under the standard

established by the Administrative Procedure Act, 5 U.S.C. §705, and will grant a stay when "justice so requires." *See, e.g., National Fuel*, 139 FERC ¶ 61,307 (2012)(reciting standards for a stay). In assessing a stay, the Commission considers several factors, which typically include: (1) whether the party requesting the stay will suffer irreparable injury without a stay; (2) whether issuing the stay may substantially harm other parties; and (3) whether a stay is in the public interest. The basis for a stay is fact specific and involves a balancing of all of these factors. *Virginia Petroleum Jobbers v. FERC*, 259 F.2d 921 (D.C. Cir. 1958)(listing factors considered in issuance of stay, including whether absence of stay will preclude future relief).

**A. The Parties Will Suffer Irreparable Harm in the Absence of A Stay**

To justify a stay, a party must demonstrate the prospect of injury that "must be both certain and great; it must be actual and not theoretical. *Wisconsin Gas v. FERC*, 788 F.2d 669, 674 (D.C. Cir. 1985). Moreover, the injury must be irreparable; mere injuries, however substantial, in terms of money, time and energy necessarily expended in the absence of a stay are not enough. The possibility that adequate compensatory or other corrective relief will be available at a later date may defeat a claim of irreparable harm. *Virginia Petroleum Jobbers Ass'n v. FPC*, 259 F.2d at 925. Recoverable monetary loss may constitute irreparable harm only where the loss threatens the very existence of the movant's business. *See Washington Metropolitan Area Transit Comm'n v. Holiday Tours, Inc.*, 559 F.2d 841, 843 n. 2 (D.C.Cir.1977).

Even under this stringent standard, the parties can satisfy the irreparable harm requirement for a stay. . Now that the certificate has issued, Algonquin can invoke eminent domain authority under Section 717f(h). Algonquin's ability to exercise eminent domain is not theoretical; as a certificate holder, Algonquin has an immediate, substantive right to condemn property under Section 717f(h). *See e.g., East Tennessee Gas*

*v. Sage*, 361 F.3d 808 (4<sup>th</sup> Cir. 2004)(granting pipeline with valid FERC certificate right to take property in advance of payment of compensation). As such, Algonquin can file condemnation actions against impacted landowners and municipal government to incur thousands of dollars in legal fees into court to defend against taking of property for a project that might either ultimately be vacated on rehearing, or significantly modified by the terms of the yet-to-be-granted water quality certificates. Moreover, even if the petitioners prevail and the eventually property is restored to the respective owner, the parties are unlikely to ever recover attorneys fees and other costs associated with defense of their land. See, e.g., *Guardian Pipeline v. 295.49 ACRES OF LAND*, Docket No. 08-C-0028 (ED Wis. 2008) (holding that federal condemnation rules governing pipeline takings do not contain fee-shifting provisions). In addition, just as courts recognize that an action that threatens the “very existence of a business” warrants a stay (see *Washington Metropolitan Area Transit Comm’n*, 559 F.2d 841, 843 n. 2), a potential action that threatens an individual’s property demands similar protection.

The potential for eminent domain is not the only irreparable harm that will result in the absence of a stay. Algonquin could begin tree-clearing activity and other ground-disturbing activity, which would irreparably harm habitat and surrounding environment.

#### **B. Grant of A Stay Will Not Harm Algonquin**

Meanwhile, issuance of the stay will not harm Algonquin. Most precedent agreements contain regulatory out clauses so that Algonquin will not face financial consequences from shippers for delays. In addition, Algonquin would suffer more harm if it were to commence the project, only to have the certificate vacated part-way through.

#### **C. Stay Is In the Interest of Justice**

Finally, a stay is in the interest of justice: the project has the potential to impact

multiple communities from New York to Boston and if built, will effectively make the next phase of the project a fait accompli. Moreover, allowing the project to proceed will force landowners to spend money to defend against a condemnation action for a project that may not be built. Accordingly, the Commission should stay this proceeding pending resolution of this matter on rehearing and judicial review.

Alternatively, if the Commission declines to grant a broad stay, it can still impose other conditions to protect against the harms described. For example, the Commission should make clear that not only is Algonquin prohibited from seeking authorization to commence construction until it obtains all necessary federal authorizations (Certificate, Appendix B, ¶9), but that it may not cut down trees or engage in any other ground-disturbing activity until such permits are issued. The Commission should also restrict Algonquin from initiating any eminent domain actions until all federal authorizations are received and a rehearing decision is issued. The Commission has authority to limit the scope of eminent domain rights conferred by the certificate. *See Mid-Atlantic Express v. Baltimore County*, Docket No. 09-2234 (4<sup>th</sup> Cir. 2010)(upholding certificate provision conditioning exercise of eminent domain on completion of site-specific surveys).

## CONCLUSION

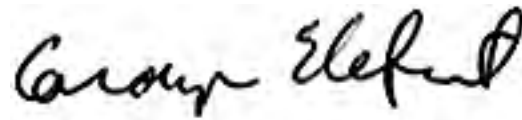
Wherefore for the reasons set for in this Petition for Rehearing, the Coalition Petitioners respectfully request that:

1. The Commission GRANT rehearing, and deny the Certificate, based on the lack of substantial evidence to support the conclusion that the project will have no significant environmental impacts and will serve the public necessity and convenience; or, in the alternative;
2. Vacate the certificate for the reasons stated herein and prepare a legally compliant EIS that treats the Atlantic Bridge and AIM projects a single unit, evaluates the

cumulative impacts of Access Northeast, shale development and greenhouse gas emissions and other issues identified herein and conducts its own independent analysis of safety and environmental issues;

3. Refrain from issuing a certificate until all federally-required permits have been issued and the NRC has fully and adequately considered review of safety issues related to the reactor;
4. Grant a stay, or prohibit Algonquin from engaging in ground-breaking activity or invoking eminent domain before resolution of this and other pending requests for rehearing.

Respectfully submitted,



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April 2, 2015

### **CERTIFICATE OF SERVICE**

I certify that on the 2<sup>nd</sup> day of April, 2015, I have served the foregoing petition for rehearing on all parties listed on the official service list through the Commission's e-filing system.

*Carolyn Elefant*

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EXHIBIT 1:  
LIST OF INTERVENORS

**EXHIBIT 1: LIST OF INTERVENORS JOINING IN THE REQUEST FOR REHEARING OF AIM PIPELINE  
CERTIFICATE, FERC DOCKET CP14-96**

Intervenors		
Intervenor	Status/City	Interest
<b>COMMUNITY WATERSHEDS CLEAN WATER COALITION, INC.</b>	501(c) (3)  NYS	<p>Members include environmental, religious, housing and community groups that depend on Croton Watershed water.</p> <p>Through regional action, CWCWC is dedicated to protecting and improving the naturally-filtered, high quality waters of the Croton Watershed and all NYS watersheds. CWCWC believes that clean, affordable water is a basic human right.</p> <p>Members residing in the areas of the Croton Watershed traversed by the pipeline will be directly impacted</p>
<b>Jessica Porter</b>	<p>Dedham, MA</p> <p>I am a direct abutter to the pipeline. I do not know the precise number of feet, but the distance between my property and the pipeline will be approximately three lanes of traffic and a sidewalk. My address is 4 Willow Street but my house is bordered to the back by Providence Highway.</p>	<p>I am impacted as an abutter to the project: safety, property value, and will be directly impacted by construction, in terms of quality of life and safety.</p> <p>For instance, I understand from the EPA's filings that FERC could have required Spectra to use low emissions fuel during construction, which would help ensure my family's health and safety during the construction process.</p>

Intervenors		
Intervenor	Status/City	Interest
<b>Food &amp; Water Watch</b>	DC-based, international non-profit with close to 60,000 supporters in impacted counties	To ensure that the food, water, and fish that humans consume is safe, accessible, and sustainable. To that end, Food & Water Watch promotes policies that will maintain the environmental integrity of our drinking water supplies, rather than put them at risk of degradation. Local coordinator lives in Glastonbury, 4 miles from the Cromwell compressor station and 2 miles from the end of the Cromwell Discharge loop.
<b>Sierra Club Lower Hudson Chapter</b>	Non- profit organization founded in 1892. Sierra Club's Lower Hudson Group has approximately 4,000 members in Rockland, Westchester, and Putnam counties.	Seeks to protect environment from pipeline impacts.
<b>Stop The Algonquin Pipeline Expansion (SAPE)</b>	grassroots group of approximately 80 members in Westchester, Putnam and Rockland counties,	Group seeks to oppose the project. An online petition initiated by SAPE opposing the Project has nearly 20,000 signatures.
<b>Better Future Project</b>	Cambridge-based non-profit, 7000 members	Seeks to build a grassroots movement to rapidly shift society beyond coal, oil and gas by coordinating programs like 350 Massachusetts, Climate Summer and Mothers Out Front.
<b>Capitalism vs. the Climate</b>	CT-based group with 17 members	Organizes non-hierarchically and takes direct action in solidarity with communities most impacted by the climate crisis. We're members of Rising Tide North America.
<b>Fossil Free Rhode Island</b>	30 member RI-based Group	Spurs real action on runaway climate change, which poses a mortal threat to the biosphere of which the human species is a part. We seek to redress inequitable distribution of environmental burdens of both local and global impact by opposing extreme energy projects such as the Keystone XL Pipeline, fracking, and mountaintop removal mining.

Intervenors		
Intervenor	Status/City	Interest
Phil Barden	2331 Centre Street, West Roxbury, MA	Directly abuts project
Eunice Carias	2335 Centre Street, West Roxbury, MA	Directly abuts project
Paul Dunn	2295 Centre Street, West Roxbury, MA	Directly abuts project
Margaret P. Sheehan	2 Glenhaven Rd., West Roxbury, MA	Directly abuts project
Paul McInerney	2369 Centre Street, West Roxbury, MA	Directly abuts project
Maria Rivera	2358 Centre Street, Roxbury, MA	Directly abuts project
Jan White	2323 Centre Street, Roxbury, MA	Directly abuts project
Mary McMahon	2356 Centre Street, Roxbury, MA	Directly abuts project
Robert and Audrey Brait	43 Paragon Road, West Roxbury, MA	Within impact radius of project
Dan McCann	66 Glenellen Rd., West Roxbury, MA	Within impact radius of project
William and Robin Cullinane	479 High Street, Dedham, MA	Within impact radius of project
Linder Sweeney Walter Partridge	67 Clisby Avenue, Dedham, MA	Within impact radius of project
Reynolds Hill, Inc.	Non-profit Membership Community Peekskill & Cortlandt, NY	Landowner directly impacted by the installation of the pipeline through a wetland and other environmentally sensitive areas on our property
Keep Yorktown Safe	Grassroots group in Yorktown, NY	
City of Peekskill, New York	Population of 24,000, located on eastern bank of the Hudson River, Westchester County, NY.	Algonquin will replace an existing pipeline within City limits with a 42-inch pipeline which will adversely impact residents who live adjacent, or in close proximity to the pipeline and area of proposed construction.
Rickie Harvey	Resident West Roxbury, one mile from project.	Resident of community directly impacted by pipeline.

Intervenors		
Intervenor	Status/City	Interest
<b>Virginia Hickey</b>	264 East Street Dedham, MA	Directly abuts project. Pipeline to run directly in front of home. Immediately impacted by the installation - digging, property damage, inconvenience, noise, and pollution of the construction project. Long term impact believes family will no longer be safe in their home. Also believes the areas of the town of Dedham in the blast zone of the pipeline which is near playing fields, shops, schools, will no longer be safe. Cannot afford to move from the home purchased (at the peak of the housing market). In relation to that home lost significant value in the years following 2005. It is only now, in 2015 beginning to gain value again. This pipeline will once again cause property to lose value.
<b>Alexandra Shumway</b>	Dedham, MA	Lives within approximately 300 feet of the proposed route with her husband and three children. Her house is in the residential neighborhood that abuts Rt 1 in Dedham. Quality of life during construction: will impacted by air quality, noise and light pollution, likelihood of night time construction which will disturb family sleeping. Long term - impacted by safety issues, risk of explosion, air quality risks of gas leaks.

Intervenors		
Intervenor	Status/City	Interest
<b>Joseph Matthew Hickey</b>	Dedham, MA	<p>Direct abutter. My house is 1/2 mile from where the compressor station will be built"); I am a direct abutter to the pipeline route. It will pass up the middle of my street, 1 lane of traffic and a sidewalk away.</p> <p>There will be the initial construction and disrupted traffic. This will cause an increase in noise dust exhaust etc.. The pipeline itself is a transmission line among other things that means there is no mercaptan added to the gas to provide that warning smell if there is a leak. My house and many of the houses in the area have are older homes with stone foundations. There is nothing to stop gas from permeating into a basement from a leak. This pipeline increases the risk of radon in my home. This pipeline will also affect my property values and what I can do on my property in the years to come.</p>
<b>West Roxbury Saves Energy (WRSE)</b>	Rickie Harvey West Roxbury Saves Energy (WRSE) 32 Pomfret Street West Roxbury, MA 02132 617-413-1786 <a href="mailto:rickieh@verizon.net">mailto:rickieh@verizon.net</a> <a href="mailto:rickieh@bellatlantic.net">rickieh@bellatlantic.net</a>	
<b>Paul Nevis</b>	West Roxbury, MA	Within impact radius of project

Intervenors		
Intervenor	Status/City	Interest
<b>Charles River Spring Valley Neighborhood Association (CRSV)</b>	West Roxbury, MA Contact: John St. Amand	Members of CRSV number several hundred homeowners and residents living in the neighborhood of West Roxbury including Baker Street to Spring Street to Oakmere Stret to Northdale Road to Centre Street to Baker Street (see map). The Centre Street portion are abutters to the the proposed West Roxbury Lateral pipeline and M&R Station portions of the AIM project. All members of CRSV are no more than .5 miles from the proposed project.  CRSV mission is to inform the residents in the area of news and issues that affect the neighborhood and their property.
<b>Pramilla Malick</b>	264 Jacobs Rd Westtown NY	Within impact radius of project



## EXHIBIT 2:

Timeline of Spectra Activities Related to  
Development of AIM and connected projects,  
Atlantic Bridge and Access Northeast.

**PUBLIC FILINGS - SPECTRA ENERGY PARTNERS**

<b>Date</b>	<b>Document</b>	<b>Information</b>	<b>URL</b>
12-13-10	This info is included in AIM Application for Certificate of Public Convenience and Necessity	Beginning of initial AIM "open season"	<a href="http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14190856">http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14190856</a>
2-11-11	Same	End of initial AIM "open season"	
9-20-12	Same	Beginning of second AIM "open season"	
11-2-12	Same	End of second AIM "open season"	
6-11-13	Same	Beginning of AIM Supplemental & Reverse "open season"	
6-25-13	Same	End of AIM Supplemental & Reverse "open season"	
6-28-13	FERC Approval of AIM use of Pre-Filing Process		
9-13-13	FERC – Notice of Intent to Prepare an EIS; Request for Comments on Environmental Issues and Notice of Scoping Meetings	Opening of AIM Scoping Process – scoping period closes on 10-14-13	<a href="http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14145816">http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14145816</a>
9-30-13	N/A	Only AIM Scoping Meeting in NY	
10-8-13	Riverkeeper	Request to extend the scoping period for 30 more days based on sensitive nature of NYC watershed – lack of notice expressed by public officials	<a href="http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14152494">http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14152494</a>
10-8-13	Putnam County Legislator Sam Oliverio	Request to extend comment [Scoping] period for another 30 days	<a href="http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14153993">http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14153993</a>
10-9-13	Comment & Intervenor Request - Fountainhead Parks	Mobile Home community – Algonquin has not maintained the right of way on their property	<a href="http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14155084">http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14155084</a>
10-10-13	Comment - NYS Senator George Latimer	Request to extend scoping period for at least 30 additional days	<a href="http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14155476">http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14155476</a>
10-10-13	Transcript of NY Scoping Meeting 9-30-13	Doug Sipe Chair of Meeting	<a href="http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14152990">http://elibrary.ferc.gov/0/idmws/file_list.asp?document_id=14152990</a>

Date	Document	Information	URL
10-11-13	Comment - NYS Assemblywoman Sandy Galef	Request to extend comment [Scoping] period for 60 days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153390">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153390</a>
10-11-13	Comment - NYS Senator Terry Gipson	Requesting that this period be extended by thirty days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153468">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153468</a>
10-11-13	Comment - Town Supervisor Linda Puglisi	Request to extend comment [Scoping] period for 60 days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153529">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153529</a> <a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14155477">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14155477</a>
10-11-13	Comment - Accufacts/Kuprewicz	Request to extend scoping period for at least 30 additional days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153643">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153643</a>
10-14-13	Comment - NY State Senator Andrea Stewart-Cousins	Request to extend scoping period for 30 additional days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153727">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153727</a>
10-14-13	Comment - Westchester BOL Peter Harkham	Request to extend scoping period for at least 30 additional days, preferably 60 days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153742">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153742</a>
10-14-13	Comment - Sierra Club Atlantic Chapter	Request to extend scoping period for at least 30 additional days	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153850">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153850</a>
10-14-13	Entergy Comments	Interesting	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153866">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14153866</a>
10-15-13	N/A	Close of AIM Scoping Period (10-14-13 was a Federal Holiday)	
10-18-13	Comment - City of Peekskill	Request for 60-day extension to the comment [Scoping] period	<a href="http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14157186">http://elibrary.ferc.gov:0/idmws/file_list.asp?document_id=14157186</a>

Date	Document	Information	URL
2014	Spectra 2013 Annual Report	"The <b>Algonquin Incremental Market (AIM)</b> project will increase the west-to-east capacity of our Algonquin pipeline system – and it is fully subscribed by virtually all of the major local distribution companies in New England. <b>Early this year, we announced the Atlantic Bridge project</b> , which expands the Algonquin and Maritimes & Northeast systems to serve the growing needs of New England states and Maritime provinces." - page 5 (President's Letter)	
		"We're pleased with our record of operating our assets reliably and safely. But we can do better when it comes to our performance regarding employee and contractor personal safety. Injury rates rose in 2013, primarily due to preventable accidents like sprains, strains, slips and falls. While some of these incidents may seem minor, we take them very seriously. We investigate every safety event to determine what happened and how to best prevent reoccurrence. We have launched an initiative to dig deeper, taking a closer, more critical look at our own processes and culture, as well as those of other successful companies and industries. Our ongoing financial success will be enhanced by the progress we make in lowering the injury and incident rates of our employees and contractors".	
		"We're even supporting the export of clean, affordable natural gas supplies beyond North America through infrastructure projects that will serve liquefied natural gas plants and terminals in both British Columbia and the U.S. Gulf Coast." <a href="#">[West Coast Projects]</a>	
2-5-14	Atlantic Bridge Press Release	Announcing Atlantic Bridge Open Season	<a href="http://investors.spectraenergy.com/phoenix.zhtml?c=204494&amp;p=irol-newsArticle&amp;ID=1897244">http://investors.spectraenergy.com/phoenix.zhtml?c=204494&amp;p=irol-newsArticle&amp;ID=1897244</a>
2-5-14	Atlantic Bridge Brochure	Beginning of Atlantic Bridge Open Season	<a href="http://www.spectraenergy.com/content/documents/Projects/Atlantic-Bridge-Open-Season.pdf">http://www.spectraenergy.com/content/documents/Projects/Atlantic-Bridge-Open-Season.pdf</a>
	Atlantic Bridge Open Season Notice	Announces executed agreement with Unitil Corporation to participate as an Anchor Shipper	
2-28-14	FERC - Application for Certificate of Public Convenience and Necessity for AIM	Included notice that other fed agencies required to complete their reviews within 90 days after issuance of the Final EIS.	<a href="http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14190856">http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14190856</a>
3-18-14	FERC - Notice of Application - AIM		

Date	Document	Information	URL
3-31-14	Atlantic Bridge Brochure	Close of Atlantic Bridge Open Season	<a href="http://www.spectraenergy.com/content/documents/Projects/Atlantic-Bridge-Open-Season.pdf">http://www.spectraenergy.com/content/documents/Projects/Atlantic-Bridge-Open-Season.pdf</a>
6-26-14	Atlantic Bridge Preliminary Facilities Diagram	Map showing Atlantic Bridge changes/additions to Algonquin pipeline	<a href="http://www.spectraenergy.com/content/inline-images/Maps/map_atlantic_bridge_full2.jpg">http://www.spectraenergy.com/content/inline-images/Maps/map_atlantic_bridge_full2.jpg</a>
6-27-14	Spectra Letter to New England States Committee on Electricity (NESCOE) regarding June 20, 2014 <i>Governor's Infrastructure Initiative Update</i> (Access Northeast)	<p>Current Spectra Energy Projects &amp; Impact to Electric Reliability and Lower Costs</p> <p>The LDC natural gas demand will be balanced through sponsored pipeline <b>expansions which include Spectra Energy's Algonquin Incremental Market expansion project (AIM) and the Atlantic Bridge project.</b> The AIM project will begin to de-bottleneck the pipeline system by winter of 2016, helping to enhance reliability and soften prices, specifically in New England. . . . AIM is underpinned by commitments from gas utility companies across southern New England. These gas utilities entered into long- term capacity contracts supported by regulators who value reliable supply and reduced delivery costs for gas consumers. Atlantic Bridge's proposed in-service is November 2017 and is similarly anticipated to be supported by gas utilities.</p> <p>While <b>both AIM and Atlantic Bridge projects will increase capacity in the region, they will not satisfy the full expanse of electric generation requirements or the electric reliability issue. Accordingly, Spectra Energy is recommending a new expansion program</b> that resolves New England's electric fuel security risk. New supplies delivering to Algonquin will require further expansions on Algonquin to reliably reach power plants, otherwise, supplies will not provide electric reliability. <b>Algonquin can continue to expand up to 1 BCF (equivalent to over 5,000 MW) in addition to AIM and Atlantic Bridge, doubling the current capacity of the system</b> and providing last mile deliverability and service flexibility required by critical power plants. Assuming a timely RFP process, this service can be provided as early as 2018 and will minimize impacts to the environment and regional stakeholders, while providing the greatest confidence for execution success.</p>	<a href="http://www.nescoe.com/uploads/Spectra_EnhancingElectricReliabilityinNE_27Jun2014.pdf">http://www.nescoe.com/uploads/Spectra_EnhancingElectricReliabilityinNE_27Jun2014.pdf</a>

Date	Document	Information	URL
7-1-14	Access Northeast - Press Release	<p>"These plans for expansion of the Algonquin and Maritimes pipeline systems are in response to the New England governors' recent initiative on new energy infrastructure and in anticipation of a Request for Proposal to be initiated by The New England States Committee on Electricity (NESCOE). This expansion, as <b>outlined in a June 27 letter to NESCOE</b>, would create up to 1 Bcf/day in capacity, and <b>is in addition to Spectra Energy's previously announced Algonquin Incremental Market (AIM) and Atlantic Bridge projects.</b>"</p> <p>* * * *</p> <p>Specifically, the Spectra Energy solution for New England will:</p> <p style="padding-left: 40px;">Be scalable, <b>to ramp up supplies as demand grows.</b></p> <p>* * * *</p> <p>Spectra Energy's <b>Algonquin Incremental Market</b> expansion project will begin to de-bottleneck the pipeline system by winter of 2016, helping to enhance reliability and soften natural gas prices in New England. AIM is underpinned by commitments from gas utility companies across southern New England that entered into long-term capacity contracts. <b>Atlantic Bridge's proposed in-service is November 2017, and it will be similarly supported by gas utilities.</b></p>	<p><a href="http://investors.spectraenergy.com/phoenix.zhtml?c=204494&amp;p=irol-newsArticle&amp;ID=1944279">http://investors.spectraenergy.com/phoenix.zhtml?c=204494&amp;p=irol-newsArticle&amp;ID=1944279</a></p> <p>Access Northeast Website:  <a href="http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/New-England-Energy-Reliability-Solution/">http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/New-England-Energy-Reliability-Solution/</a></p>
As of 7-3-14	<i>Northeast Gas Association</i> Proposed Pipeline Projects - July 2014 Issue	<p>Map showing both "AIM" and "Atlantic Bridge" proposals</p> <p>Description of <u>Atlantic Bridge</u>:          "Incremental expansion on Algonquin [pipeline] and Maritimes &amp; Northeast [pipeline], to serve northern New England and Canadian Maritimes. Capacity increase from 100 to 6000,000 Dth/d"  <u>Atlantic Bridge</u> Described as "Announced Feb. 2014, Open Season held, Feb.-March, 2014"</p>	
As of 7-3-14	<i>Northeast Gas Association</i> Proposed Pipeline Projects - July 2014 Issue	<p>Description of <u>AIM</u>:          "Providing 342 MMcf/d of additional capacity to move Marcellus production to Algonquin City Gates. Shippers and 6 gas utilities in New England"  <u>AIM</u> Status described as "Open season held fall 2012, Filed with FERC, 2-14"</p>	
8-6-14	FERC issues AIM Draft EIS		
8-6-14	AIM DEIS page 4-272 "Other Known Projects"	<p>"Algonquin is also currently evaluating proposals to modify other parts of its existing interstate natural gas pipeline system to meet the growing market demand for increased energy (Algonquin, 2014d). This planned expansion is referred to as the <b>Atlantic Bridge Project</b> and would involve work in New York, Connecticut, Rhode Island, and Massachusetts."</p>	

Date	Document	Information	URL
9-16-14	Access Northeast Press Release	<p>"The [Northeast Access] gas pipeline expansion project will enhance the Algonquin and Maritimes pipeline systems, . . ."</p> <p>"Access Northeast, originally outlined by Spectra Energy in a June 27, 2014, letter to the New England States Committee on Electricity (NESCOE), . . ."</p> <p>"This expansion will complement Spectra Energy's previously announced Algonquin Incremental Market (AIM) and Atlantic Bridge projects. Spectra Energy's AIM expansion project will begin to de-bottleneck the pipeline system by the winter of 2016-2017, helping to enhance reliability and reduce natural gas price volatility in New England."</p> <p>"Given the advanced nature of the project, expressions of interest from natural gas service providers for regional assets will be secured by October 31, 2014."</p>	<p><a href="http://investors.spectraenergy.com/phoenix.zhtml?c=204494&amp;p=irol-newsArticle&amp;ID=1968326">http://investors.spectraenergy.com/phoenix.zhtml?c=204494&amp;p=irol-newsArticle&amp;ID=1968326</a></p>

Date	Document	Information	URL
???	Spectra "Access Northeast" Website	<p><b>" Natural Gas and Electric Power</b></p> <p>Typically, gas distribution companies, not electric power producers, hold the firm contracts for natural gas flowing into New England. <b>We currently have two projects in development, Algonquin Incremental Market (AIM) and Atlantic Bridge, that will increase natural gas supply for residences and businesses in 2016 and 2017, respectively.</b> For electric reliability, however, the power generators need access to natural gas service during peak demand. The current effort by the region's leaders is critical to making that happen, and thus critical for New England's future security and prosperity."</p> <p>* * * *</p> <p>"Specifically, Spectra Energy proposes expanding its Algonquin and Maritimes &amp; Northeast systems, pipelines which already directly connect to about 60 percent of New England's natural gas-fired electric generation. This will provide direct, guaranteed natural gas deliveries to critical power plants that are required for grid stability, especially on peak power demand days. The pipeline expansions will be available in increments of 200 million cubic feet per day (cf/d), <b>up to 1 billion cf/d (1.5 billion cf/d including AIM and Atlantic Bridge),</b> and could be in service as early as November 2018, depending on the schedule set by the states. Importantly, the expansions can occur on our existing footprint to minimize environmental impact and stakeholder disruption. This solution will be timely, environmentally responsible, scalable and effective."</p> <p><i>Algonquin Gas Transmission:West to East Usage and Potential Increased Capacity</i></p> <p>■ Current Capacity ■ Electric Reliability Solution ■ AIM &amp; Atlantic Bridge</p>	<a href="http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/New-England-Energy-Reliability-Solution/">http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/New-England-Energy-Reliability-Solution/</a>



Date	Document	Information	URL
8-3-14	Platts Online Interview with Spectra regarding the Access Northeast Project	<p>Platts interview with Bill Yardley, Spectra president for transmission and storage:</p> <p><u>Interviewer</u> (at 1:31): Spectra is proposing an expansion of capacity to bringing an added 1 billion cu. ft. a day to New England</p> <p><u>Spectra</u> (at 1:41): Yes well that's really <b>on top of a couple of other expansions</b>. We've got one for the local distribution companies . . . and that's called our <b>AIM project</b>. That's about 300,000 [cu.ft.] a day and about a billion dollars. We have <b>another one</b> planned for 2017 which is about another billion dollars - a similarly sized project which we'll be finalizing shortly - <b>and another bcf, up to a bcf could come for the electric generation load starting in 2018</b> and that would probably be in a 2 to 3 billion dollar range.</p> <p>* * * *</p> <p><u>Interviewer</u> (at 2:20) This is pretty costly stuff, as you note - what sort of commitments do you need and how do you pay for it?</p> <p><u>Spectra</u> (at 2:32) . . . so far is that we get nearly 100% commitments for the pipe. So we don't really build on spec . . . <b>so the first two expansions I mentioned, AIM, and what we're calling Atlantic Bridge is the second one</b>, they're for the local distribution load.</p> <p>* * * *</p> <p><u>Interviewer</u> (at 3:14) And <b>there's competition, to, to bring gas to that region</b>. Kinder Morgan, for example, has major plans to bring up to 2 billion cubic feet a day of additional capacity. Is there enough demand for these different projects?</p> <p><u>Spectra</u> (at 3:27) Yeah, you know it's interesting. When you look at the demand that resides on the Algonquin System for electric generation. So Algonquin is our pipeline that runs from New Jersey up to Boston. And then we own the Maritimes and Northeast pipeline that goes up into Maine and Nova Scotia. About 60% of the electric generation is off of those two pipelines. And so whatever happens in the region is going to involve Algonquin. For the region as a whole, there's probably - - if we got a BCF a day into the region, that's probably ample for the next few years for electric generation. And New England is one of those areas - I'm from there - where you know that conservation and renewables are going to be gaining a lot of momentum and so we want to be careful not to overbuild the area but build it in the appropriate way.</p> <p><u>Interviewer</u> (at 4:23) You know, you mentioned you're a native New Englander, as am I. We know that there's often <b>opposition to energy projects in that region</b>, perhaps more so than even in other parts of the country. Do you anticipate this could be a problem for Spectra as it goes forward with this project?</p> <p><u>Spectra</u> (at 4:39) Well, we look at that very carefully. And when trying to figure out how much gas to bring into the region and how to do it, there are obviously various methods. You can bring in a big greenfield project or you can improve the infrastructure that you've got. in this region, we have a ton of experience here - we still have a hundred employees in the Boston area - it's best to take advantage of your existing footprint and improve that. And that's the direction that we chose to go. And it's more environmentally responsive, responsible rather, it's cost effective. <b>You can do it incrementally so you don't have to build the entire BCF all at once</b>. And we think that it's the best solution for what the region really wants to see. <b>And I think you end up with - well, I know you end up with a lot less potential opposition if you do that.</b></p>	<a href="http://www.plattstv.com/video/new-england-seeks-more-gas-supplies-august-3/3706671906001">http://www.plattstv.com/video/new-england-seeks-more-gas-supplies-august-3/3706671906001</a>

Date	Document	Information	URL
9-4-14	Atlantic Bridge Landowners Informational Meetings Letter from Spectra to Yorktown Supervisor	"During the informational meeting, Algonquin representatives will be available to answer your questions on land acquisition, environmental and permitting processes, construction, operation and other aspects of the AB Project. We encourage you to attend the meeting to learn about the Project, review mapping, displays, collect information about the Project and Algonquin, and informally ask any questions that you may have,"	<a href="https://col126.mail.live.com/mail/ViewOfficePreview.aspx?messageid=mgXkXjdvZA5BGrlwAhWtm9KA2&amp;folderid=flagBnFUxcckiuw5u49mNKHw2&amp;attindex=0&amp;cp=-1&amp;attdepth=0&amp;n=54458243">https://col126.mail.live.com/mail/ViewOfficePreview.aspx?messageid=mgXkXjdvZA5BGrlwAhWtm9KA2&amp;folderid=flagBnFUxcckiuw5u49mNKHw2&amp;attindex=0&amp;cp=-1&amp;attdepth=0&amp;n=54458243</a>
9-16-14	Boston Globe Article - Access Northeast	<p>"The pipeline operator, Spectra Energy Corp., of Houston, and Northeast Utilities, the parent of Nstar and Western Massachusetts Electric Co., said they will invest \$3 billion in a project to bring an additional 1 billion cubic feet of gas a day into New England."</p> <p>* * * *</p> <p>"Spectra and Northeast Utilities plan to expand the Algonquin pipeline, which runs from New Jersey to Everett, and the Maritimes &amp; Northeast line, which carries liquefied natural gas that is pumped from ships anchored in the waters off of Eastern Canada.</p> <p>The project, if approved by the Federal Energy Regulatory Commission, which regulates interstate pipelines, would be completed in 2018, company officials said. May said the project cost would be recovered from customers over the first year following the project's completion, as is typical for such capital investments."</p> <p>* * * *</p> <p>"The Access Northeast project would complement an earlier proposal by Spectra to expand the Algonquin pipeline by 14 percent by adding 40 miles of pipe and installing new compressor units, company officials said. If it is approved by the FERC, the project is scheduled to be completed in the winter of 2016-17."</p>	<a href="http://www.bostonglobe.com/business/2014/09/15/nstar-and-spectra-announce-project-increase-new-england-natural-gas-supply/11IyTBQ2oiSKqwKx0iZVnM/story.html">http://www.bostonglobe.com/business/2014/09/15/nstar-and-spectra-announce-project-increase-new-england-natural-gas-supply/11IyTBQ2oiSKqwKx0iZVnM/story.html</a>
9-17-14 thru 9-29-14	Atlantic Bridge Project Calendar	7 Atlantic Bridge Open Houses	<a href="http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/">http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/</a>
9-17-14	Atlantic Bridge Project Calendar	First Atlantic Bridge Open House Glastonbury, CT	<a href="http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/">http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/</a>
9-29-14	Close of AIM DEIS comment period		
10-1-14 thru 10-8-14	Atlantic Bridge Project Calendar	5 Additional Atlantic Bridge Open Houses	<a href="http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/">http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/</a>

Date	Document	Information	URL
10-8-14	Atlantic Bridge Project Calendar	Last Atlantic Bridge Open House Buzzard Bay, MA	<a href="http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/">http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/Atlantic-Bridge/Project-Calendar/</a>
10-22-14	FERC Request for additional AIM Data		
10-31-14	Spectra response to AIM data request		
12-8-14	Spectra-NE Utilities & Iroquois Alliance – Access Northeast	Access Northeast, which was <b>announced in September</b> . . . will move natural gas sourced from the Appalachian basin into New England by maximizing the use of existing infrastructure on existing footprints.  “With FERC’s recent issuance of a certificate approving the Constitution Pipeline Project and Iroquois’ companion Wright Interconnect Project, <b>another major milestone</b> in establishing a direct link to the Marcellus supply basin has been achieved,” - Jeff Bruner, President of Iroquois	
12-19-14	Initial target date for AIM Final EIS (postponed by FERC on 10-22-14?)		
1-23-15	AIM Final EIS is issued	Begins 90 period for completion of other Federal reviews.	
1-30-13	Spectra Request on Atlantic Bridge	Letter, filed January 30, 2015, requesting use of the Federal Energy Regulatory Commission’s (FERC or Commission) pre-filing review process for Algonquin Gas Transmission, LLC’s (Algonquin) planned Atlantic Bridge Project Letter also stated that Algonquin intends to file an application no later than September 2015	
1-31-15	Spectra's requested AIM FEIS date on 10-31-14		
2-20-15	FERC Response on Atlantic Bridge Pre-Filing Request	"We believe that beginning the Commission’s review of this proposal prior to the receipt of your application will greatly improve our ability to identify issues early and address them in our environmental document." Maggie Suter named as Project Manager	
3-3-15	FERC Issues AIM Certificate		

Date	Document	Information	URL
3-23-15	Atlantic Bridge Files Stakeholders Letter	"The stakeholder mailing list consists of a list of government officials and a list of private landowners. The portion of the stakeholder mailing list containing private landowner contact information contains privileged information . . .	
4-23-15	AIM Federal Authorization Decision Deadline	90-day deadline from issuance of the Final EIS.	

# EXHIBIT 3:

## Nuclear Issues

June 27, 2014

To: Westchester Board of Legislators  
Energy & Environment and Infrastructure Committees

Subject: Nuclear incompatible with natural gas

This is a follow-up to my presentation to your Committee last week. Since that time I have received a letter from the NRC (copy enclosed) assuring they will require Indian Point to analyze the potential risks associated with the AIM project. While this is good news, I still fear both Entergy and the NRC will withhold this information from the public under the false premise of national security.

I am not opposed to either nuclear power or the expansion of the gas transmission lines however they cannot safely co-exist within miles of one another due to the potential risk of a gas line malfunction causing major damage to the nuclear facility and the potential for large release of highly radioactive material .

Supporting my position is a copy of a risk analysis conducted for a proposed fuel enrichment facility in Eunice, New Mexico. This analysis is required by NRC regulations<sup>[1]</sup>. This proposed facility only contains low levels of radioactive material and no reactors or spent fuel and is located in a very low population zone.

The analysis looks at the risk of one 16-inch pipeline operating at 50 pounds per square inch with a maximum capacity of 500,000 cubic feet per day and located 1800 feet from the facility. The analysis determined that the risk from a gas line failure was greater than what was acceptable. Contrast this to the proposed AIM project with a new 42 inch gas line operating at 850 pounds per square inch located 1500 feet from vital structures, and a few hundred feet from oil storage tanks, with a capacity of 3,420,000 cubic feet per day. Consequences of this type of accident in Westchester County are incalculable and could well exceed the damages of the Fukushima accident. In my opinion, there is no way either Entergy or the NRC could approve this project as presently proposed but they will make every effort to find a way to justify this dangerous project.

The risk of this installation is thousands of times greater than the facility in New Mexico and located in one of the most densely populated areas in the US. The letter to me from the NRC states that it will require Entergy to assess the risk of the new gas line per the requirements of 10 CFR 50.59.

This was somewhat of a surprise to me that the NRC now admits there is a potential danger and will require a detailed evaluation by Entergy.

This NRC letter to me is not public information but I have informed the NRC that I waive any confidentiality requirement and the letter can be made public.

I have shared this letter with Fred Dacimo, VP at Energy and my previous boss at Indian Point.

My only request of the Committee is that it assures the proper analysis is conducted and made available to its experts for review. I am willing to appear before the Committee along with representatives of the NRC, Entergy and Spectra to openly discuss this proposed project.

Sincerely.

A rectangular box containing a handwritten signature in cursive script that reads "Paul M. Blanch".

Paul M. Blanch

135 Hyde Rd.

West Hartford, CT 06117

[860-236-0326](tel:860-236-0326)

## ***Paul M. Blanch*** ***Energy Consultant***

November xx, 2014

Chairman John Stetkar  
USNRC  
Advisory Committee on Reactor Safeguards  
Washington DC 20001

Dear Mr. Chairman,

I am writing you to request your attention about a grave concern I have with the safety of the Indian Point nuclear plants with the existing and a new proposed natural gas transmission lines traversing and in the proximity of the site. From my conversations with Dr. Mario Bonaca, former ACRS Chairman, he is not aware this issue has ever been brought before the ACRS.

I have made many attempts to address this issue (see enclosure) with the NRC Staff only to be informed that these lines do not present any risk which would jeopardize compliance with 10 CFR 100.20. The most recent Indian Point Inspection Report even states this new 42 inch 850 PSI line can be installed within the provisions of 10 CFR 50.59 will not require a license amendment. The analysis supporting this 10 CFR 50.59 analysis is fraught with significant errors and assumptions. I have filed two different 10 CFR 2.206 petitions (enclosed). My latest petition dated October 15, 2014 primarily deals with inaccurate and incomplete information submitted by Entergy. I do not expect the ACRS to deal with this 10 CFR 50.5 and 50.9 issues but I would appreciate an assessment on the underlying technical and safety issues.

I am a registered professional engineer with more than 45 years of experience in nuclear safety, engineering operations and federal regulatory requirements. I have spent several hundred hours reviewing documents related to the proposed expansion of the Algonquin gas pipeline and consulting with other engineers in my field. I have been an expert witness for the State of New York related to the relicensing of Indian Point units #2 and #3. I am writing the ACRS to advise you that critical information about this project has been kept from public view and not shared with the ACRS. As a result, public, the ACRS members of Congress are unaware of the very significant risks this proposed project poses to the Indian Point nuclear power facility and to the health and safety of the citizens of Westchester and the entire tri-state region.

Spectra Energy's proposed Algonquin Incremental Market ("AIM") gas pipeline expansion project is currently under review by the Federal Energy Regulatory Commission (FERC). The project consists of the construction of a new 42" diameter,



high-pressure (850 PSI) gas pipeline running from Rockland County and crossing under the Hudson River into Westchester County. According to plans submitted to FERC by Spectra Energy and by Entergy's analysis the new gas transmission line will run within 105 feet of nuclear structures whose failure could result in significant damage to vital components and structures. See enclosed letter to FERC dated September 29, 2014 that outlines the potential nuclear safety issues associated with the proposed new gas transmission line.

An accident or failure of the new pipeline could result in a catastrophic gas explosion and release of the facility's forty years of radioactive spent fuel, rendering all of Westchester County, New York City and much of Connecticut and Long Island uninhabitable for generations. The potential for a disaster of this magnitude demands the most thorough, independent, transparent and stringent risk analysis<sup>1</sup> be conducted and reviewed before any decision is made to issue a permit for this project. An independent analysis is not being conducted, and if it has, it is not public information. The NRC's review of Entergy's 10 CFR 50.59 submittal dated August 21, 2014 was based upon risks and probabilities inconsistent with acceptable engineering practices and in direct conflict with NTSB investigations of similar gas line failures.

For example, Entergy's analysis assumes that the flow of natural gas from a rupture would be terminated 3 minutes whereas similar ruptures required 30 minutes to 3 hours to isolated the rupture. Leak detection and isolation of both upstream and downstream valves are from Houston Texas. Emergency response is not possible until the flow of gas is terminated.

Another deficiency in the analysis is the proposed new line runs within 105 feet of Gas Turbine Fuel Oil storage tanks located 100 feet in elevation above vital structures and contain hundreds of thousands of gallon of jet fuel. These tanks contain hundreds of thousands of fuel and are located 100 feet in elevation above the plant. These tanks are located about 600 feet from other vital structures.

This analysis is unacceptable.

I also draw your attention to the following:

- In its Draft Environmental Impact Statement (EIS) released by FERC on August 6, 2014, FERC claimed that the proposed new pipeline would "not pose any new safety hazard to the [Indian Point nuclear power] facility." Such a statement, without the proper independent risk analysis to support it, is irresponsible and unacceptable.
- FERC's Draft EIS omits any mention of damage prevention, emergency response, public awareness, and consequences of a gas pipeline rupture. An analysis of all of

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<sup>1</sup> [29 CFR 1910.119 Appendix C to §1910.119 -- Compliance Guidelines and Recommendations for Process Safety Management](#)

these potential risks is required by the Department of Transportation.<sup>2</sup> An incomplete analysis such as this should not be accepted.

- Entergy's "Hazard Analysis" summary, submitted to the Nuclear Regulatory Commission on August 21, 2014, was conducted by a former employee of the New York Power Authority, the previous owner of IPEC, and fails to assess the true risk presented by the new and existing gas transmission pipelines. The person conducting this analysis apparently has no known experience or publications in the areas of nuclear or gas line risk assessment. Entergy and the NRC under the provisions of 10 CFR 2.390 have withheld his analysis.

- Indian Point is the only nuclear power facility in the U.S. with gas transmission lines located within the protected areas of the nuclear power plant; three existing natural gas transmission pipelines traverse the Indian Point site close to vital structures. Extra precautions should be taken, but are not proposed by Spectra Energy or be Entergy.

- Spectra Energy's plans for the pipeline do not include any local automatic gas termination valves, which were removed after the initial Safety Evaluation Report (SER) and no means to combat a fire or explosion prior to gas flow termination as required by law.<sup>3</sup> The controls to terminate the gas flow remotely are located at company's facility in Houston, Texas. This is unacceptable.<sup>4</sup>

The following are a few of the primary examples of the deficiencies I have noted in my review of the limited contained within Entergy's summary of its analysis is provided.

The detection of a leak from a remote location is a very uncertain task according to Mr. Rick Kuprewicz, a world recognized expert on the risk of gas transmission lines.

The FSAR dated 2011 clearly stated that a rupture/failure of the existing 70 year old 26 and 30 inch gas transmission lines crossing the Indian Point are "not feasible." This statement is in direct conflict with Entergy's most recent analysis

Failure of any of these gas pipelines could result in a total loss of cooling to the reactor cores and the inventory of spent fuel. Spectra Energy and Entergy have

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<sup>2</sup> 30 CFR Part 380, Appendix A to Part 380 – "Minimum Filing Requirements for Environmental Reports Under the Natural Gas Act."

<sup>3</sup> 49 CFR 192.6155 states that "each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency."

<sup>4</sup> Stopping the flow of a 42-inch, 850 psi gas line is very different from stopping the flow of a 16-inch, low pressure gas line such as currently exists. Spectra does not address this disparity.

made no provisions to address this type of event.

Corrosion of the gas lines may be accelerated by stray currents from the two proposed intersecting high-voltage DC electrical lines, which would also run in the vicinity of pipes and tanks at Indian Point. Spectra Energy has not addressed this possibility in their documents.

Some of the possible consequences of a gas pipeline fire or explosion at Indian Point include loss of power to the entire site, secondary fires from liquid fuel storage tanks, reactor core damage and melting, asphyxiation of site personnel, spent fuel, radioactivity release, and massive social and economic damage for generations. None of these possible risks are being addressed.

Despite the lack of a complete, independent risk analysis, the NRC Staff has concluded<sup>5</sup>:

*“Finally, the staff determined that Entergy’s conclusions involving the potential rupture of the proposed pipeline near IPEC poses no threat to safe operation of the plant or safe shutdown of the plant, are reasonable and acceptable, and are also comparable with the staff’s conclusions.”*


Based on my review and by pipeline experts of Entergy’s summary of its risk analysis and the subsequent review by the NRC, I believe there are serious factors that have not been properly considered.

I believe the ACRS may want to obtain and review copy of both the Entergy and the NRC’s analysis as discussed in the NRC’s Inspection Report and discussed in Entergy’s 10 CFR 50.59 analysis dated August 21, 2014.

I formally request that I be allowed to present my position before the ACRS. I would also welcome the presence of the NRC staff and Entergy to present their thoughts before the ACRS. All of my information is based upon publically available information and the meeting should be open to the public.

I look forward to your prompt response.

Sincerely,



Paul M. Blanch, P. E.  
135 Hyde Rd.  
West Hartford, CT 06117  
860-236-0326

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<sup>5</sup> NRC Inspection Report dated November 7, 2014

<sup>6</sup> Ibid

860-922-3110

pdblanch@comcast.net

**Enclosures:**

- Professional credentials
- 10 CFR 2.206 petition submitted to the NRC on October 15, 2014
- 10 CFR 2.206 petition submitted to the NRC on October 25, 2015
- Letter to FERC dated September 29, 2014NRC
- NRC Indian Point Inspection report dated November 7, 2014
- Entergy 10 CFR 50.59 analysis dater August 21, 2014 with Blanch comments.
- Letter from New York Attorney General dated
- Letter from Paul Blanch to Governor Cuomo dated
- Letter from Congresswoman Lowey dated

**Paul M. Blanch**  
*Engineering and Energy Consultant*

November 18, 2014

The Honorable Andrew M. Cuomo  
Governor of New York State  
New York State Capitol Building  
Albany, New York 12224

Dear Governor Cuomo,

I am a registered professional engineer with more than 45 years of experience in nuclear safety, engineering operations and federal regulatory requirements. I have spent several hundred hours reviewing documents related to the proposed expansion of the Algonquin gas pipeline and consulting with other engineers in my field, and I am writing to you now to advise you that critical information about this project has been kept from public view. As a result, decision makers are unaware of the very significant risks this proposed project poses to the Indian Point nuclear power facility and to the health and safety of the citizens of Westchester and the entire tri-state region.

As you are aware, Spectra Energy's proposed Algonquin Incremental Market ("AIM") gas pipeline expansion project is currently under review by the Federal Energy Regulatory Commission (FERC) and is subject to permitting approval from your Department of Environmental Conservation. The project consists of the construction of a new 42" diameter, high-pressure (850 PSI) gas pipeline running from Rockland County and crossing under the Hudson River into Westchester County. According to plans submitted to FERC by Spectra Energy, the pipeline will intersect two proposed 1,000 megawatt High Voltage Direct Current (HVDC) electrical lines and run within 105 feet of nuclear power structures in a significant seismic zone and densely populated region.

An accident or failure of the new pipeline could result in a catastrophic explosion and release of the facility's forty years of radioactive spent fuel, rendering all of Westchester County, New York City and much of Connecticut and Long Island uninhabitable for generations. The potential for a disaster of this magnitude demands that public officials require the most thorough, independent, transparent and stringent risk analysis be conducted and reviewed before any decision is made to issue a permit for this project. However, that analysis IS NOT being conducted or required, and in fact, information vital to the decision-making process is being concealed from federal officials, members of your own administration and the public. This is unacceptable.

I draw your attention to the following:

- In its Draft Environmental Impact Statement (EIS) released on August 6, 2014, FERC claimed that the proposed new pipeline would "not pose any new safety hazard to the [Indian Point nuclear power] facility." Such a statement, without the proper

independent risk analysis to support it, is irresponsible and unacceptable.

- FERC's Draft EIS omits any mention of damage prevention, emergency response, public awareness, and consequences of a gas pipeline rupture. An analysis of all of these potential risks is required by the Department of Transportation.<sup>1</sup> An incomplete analysis such as this should not be accepted.
- The Nuclear Regulatory Commission acknowledges that the construction of the pipeline requires an updated site hazards analysis. However, they suggest the analysis can be performed *after* FERC's permit is issued. This runs counter to the purpose of a risk analysis to determine whether or not new hazards pose undue risk precluding permit issuance in the first place.
- Entergy's "Hazard Analysis" summary, submitted to the Nuclear Regulatory Commission on August 21, 2014, was conducted by a former employee of the New York Power Authority, the previous owner of IPEC, and fails to assess the true risk presented by the new and existing gas transmission pipelines. I am attaching my formal petition to the NRC, which details the failures and omissions of the Hazard Analysis.
- Indian Point is the only nuclear power facility in the U.S. with gas transmission lines located within the protected areas of the nuclear power plant; three existing natural gas transmission pipelines traverse the Indian Point site close to vital structures. Extra precautions should be taken, but are not proposed by Spectra Energy.
- Spectra Energy's plans for the pipeline do not include any local automatic gas termination valves and no means to combat a fire or explosion prior to gas flow termination as required by law.<sup>2</sup> The valves to shut off the gas flow remotely are located at company's facility in Houston, Texas. This is unacceptable.<sup>3</sup>
- The proposed gas pipeline segments do not even meet the strictest safety standards established by the Department of Transportation.<sup>4</sup> We should demand the highest standards, not the minimum standards for a gas pipeline.

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<sup>1</sup> 30 CFR Part 380, Appendix A to Part 380 – "Minimum Filing Requirements for Environmental Reports Under the Natural Gas Act."

<sup>2</sup> 49 CFR 192.6155 states that "each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency."

<sup>3</sup> Stopping the flow of a 42-inch, 850 psi gas line is *very* different from stopping the flow of a 16-inch, low pressure gas line such as currently exists. Spectra does not address this disparity.

<sup>4</sup> 49 CFR 192 "Transportation of natural and other gas by pipeline: Minimum federal safety standards"

- Corrosion of the gas lines may be accelerated by stray currents from the two proposed intersecting high-voltage DC electrical lines, which would also run in the vicinity of pipes and tanks at Indian Point. Spectra Energy has not addressed this possibility in their documents.
- Failure of any of these gas pipelines could result in a total loss of cooling to the reactor cores and the inventory of spent fuel. Spectra Energy and Entergy have made no provisions to address this type of event.
- Some of the possible consequences of a gas pipeline fire or explosion at Indian Point include loss of power to the entire site, secondary fires from liquid fuel storage tanks, reactor core damage and melting, asphyxiation of site personnel, spent fuel radioactivity release, and massive social and economic damage for generations. None of these possible outcomes are being addressed.

Despite the lack of a complete, independent risk analysis, your administration's agencies are considering permits for the project, and FERC indicates that its Final Environmental Impact Statement will be released next month. FERC could issue the permit for this project immediately thereafter.

Therefore, a comprehensive, independent and transparent risk analysis is *urgently* needed, and the deeply flawed and incomplete documents being offered by Spectra, Entergy, the NRC, as well as the FERC Draft Environmental Impact Statement, should be rejected. This is the responsibility of any decision maker with any authority over any aspect of the proposed Spectra AIM pipeline, including the NYS DEC.

The possibility that the construction and operation of a massive new high pressure gas pipeline in close proximity to a nuclear power plant could result in a human catastrophe of unimaginable proportions mandates that you and other public officials demand accountability and take every possible precaution to ensure the health and safety of this generation and every generation that follows.

I urge you in the strongest possible terms to use your offices to fulfill this responsibility.

Sincerely,



Paul M. Blanch. P. E.  
135 Hyde Rd.  
West Hartford, CT 06117 860-236-0326

enclosures:

Professional credentials  
Petition submitted to the NRC on October 15, 2014

Secretary Johnson  
US Dept. of Homeland Security  
Washington, DC 20528

Commissioner Hauer  
Department of Homeland Security  
1220 Washington Avenue,  
Bldg. 7A, State Campus  
Albany, NY 12242

Brian Wright  
Deputy Director of Critical Infrastructure  
Department of Homeland Security  
1220 Washington Avenue,  
Bldg. 22, State Campus  
Albany, NY 12242

Re: Spectra Energy Algonquin Incremental Market (AIM) natural gas pipeline/compressor stations expansion, Federal Energy Regulatory Commission Docket #14-96

December 2, 2014

Dear Secretary Johnson, Commissioner Hauer, and Mr. Wright:

We are contacting you regarding an urgent time-sensitive Homeland Security matter -- the proposed placement of a 42" diameter, high pressure natural gas pipeline to intersect 2 proposed 1,000 megawatt power lines within 105 feet of vital structures at the Indian Point Nuclear Facility and close to its more than forty years of spent fuel, in a significant seismic zone and densely populated area near the financial capital of the world.

A successful attack could displace millions of residents and render the surrounding area uninhabitable for generations. We have brought these issues to the Nuclear Regulatory Commission, FERC and members of Congress, yet, it appears that as early as December 19, 2014, FERC may issue its Final Environmental Impact Statement on Spectra Energy's Algonquin Incremental Market (AIM) pipeline expansion project and issue its permit shortly thereafter.

The enclosed documents from Rick Kuprewicz, a leading pipeline expert and Paul Blanch a noted nuclear power expert and engineer, clearly outline the numerous increased threats posed by the convergence of these new hazards and the Indian Point nuclear power plant and the lack of a comprehensive, independent and transparent risk assessment.

Further serious concerns are raised due to the alarming rates of transmission pipeline incidents. According to the U.S. Department of Transportation's Pipelines and Hazardous Materials Safety Administration, in 2013 alone, there were 95 incidents in gas transmission pipelines. On 7/5/14 a 2.5 magnitude earthquake occurred 10 miles from Indian Point.

The purpose of an expansion of this magnitude is to enable Spectra to export gas overseas. Along with enhanced energy efficiency, the existing pipeline has adequate capacity to serve the growing energy needs of New England. Rather than protect our energy security, this proposed expansion will drain it.



Given the high density populations of Westchester, Rockland and Putnam and the proximity of Indian Point to NYC and its water supply, a pipeline explosion near Indian Point would be a disaster of catastrophic proportions.

According to the 2011 DHSES Strategic Plan, the first DHSES goal is to:

*Prevent, Protect Against, and/or Mitigate Acts of Terrorism and Man-Made and Natural Hazards: by assessing and understanding our threats, vulnerabilities and consequences, sharing information and intelligence with our stakeholders, and taking proactive measures to lessen the likelihood or impact of incidents, emergencies and disasters.*

We urge you to help protect this region and take prompt proactive measures to reduce the likelihood of this potential disaster by halting this dangerous and unnecessary project immediately until a comprehensive, independent, transparent risk assessment is conducted, completed and reviewed. This assessment must include an evaluation of a possible terrorist attack that could impact the gas lines and the storage of the jet fuel in proximity of one another prior to any decisions regarding the proposed AIM pipeline expansion project.

Thank you in advance for your prompt and careful attention to this urgent matter.

Sincerely,

Sandra R. Galef  
Assemblywoman District 95

Kenneth W. Jenkins  
Westchester County Legislator, 16th L.D.

Peter B. Harckham  
Westchester County Legislator, 2nd L.D.

Harriet Cornell  
Chairwoman, Environmental Committee  
Rockland County Legislature

Benjamin Boykin  
Westchester County Legislator, 5th L.D.

Leo Weigman  
Mayor – Village of Croton-on-Hudson

Catherine F. Parker  
Westchester County Legislator, 7th L.D.

Victoria Gearity  
Trustee & Mayor-Elect Ossining Village

Alfreda A. Williams  
Westchester County Legislator, 8th L.D.

Amy Rosmarin  
Councilwoman – Town of North Salem

Catherine Borgia  
Westchester County Legislator, 9th L.D.

Richard Clinchy  
Councilman – Town of Somers

MaryJane Shimsky  
Westchester County Legislator, 12th L.D.

Dan Welsh  
Councilman – Town of Lewisboro

Lyndon Williams  
Westchester County Legislator, 13th L.D.

Enclosures:

Letter to Governor Cuomo from Paul Blanch, nuclear power expert and engineer

Petition to Nuclear Regulatory Commission from Paul Blanch

Report from Richard Kuprewicz of Accufacts, Inc., pipeline expert

NYS Office of the Attorney General's comments to FERC regarding proposed AIM pipeline expansion

Office of Infrastructure Protection  
National Protection and Programs Directorate  
U.S. Department of Homeland Security  
Washington, DC 20528



# Homeland Security

JAN 12 2015

The Honorable Amy Rosmarin  
Councilwoman  
Town Board of North Salem  
266 Titicus Road  
North Salem, New York 10560

Dear Councilwoman Rosmarin:

Thank you for your December 2, 2014 letter to Secretary Johnson regarding the potential vulnerabilities of the Indian Point Nuclear Facility and the proposed gas pipeline. The Indian Point Nuclear Facility is owned and operated by Entergy Corporation. The U.S. Nuclear Regulatory Commission (NRC) is responsible for ensuring the safety and security of commercial nuclear power plants. As such, we recommend you follow up with the NRC to address this issue.

While the Department of Homeland Security (DHS) does not maintain any ownership of or regulatory authority over nuclear facilities, it leads the national effort to protect critical infrastructure from all hazards by managing risk and enhancing resilience through collaboration with the critical infrastructure community. This effort is conducted through the Critical Infrastructure Partnership Advisory Council (CIPAC) voluntary framework with partners from across the Government and industry. Under the CIPAC voluntary framework, DHS coordinates closely with the U.S. Department of Energy, the NRC, state and local governments, and industry partners to enhance critical infrastructure security and resilience. Industry partners include the owners and operators of the Nation's critical infrastructure, including those from nuclear power plants. Still, the NRC is the lead agency in all regulatory matters noted in your correspondence.

Regarding pipeline system security, the pipeline industry's security environment is based on the Pipeline Security Guidelines developed and issued by the Transportation Security Administration (TSA), as well as guidance developed by industry security working groups. During periods of heightened threats, pipeline companies follow the TSA Pipeline Security Guidelines for implementing increasingly stringent measures, to include, among others:

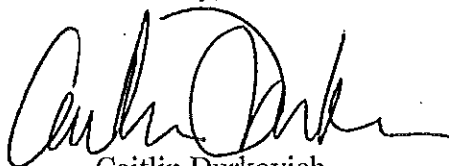
- Communicating threat information to employees to raise security awareness throughout the company;
- Enhancing access control;
- Deploying physical barriers;
- Increasing patrolling of critical facilities;
- Testing security monitoring and surveillance equipment to ensure full capability; and
- Fostering threat level response coordination with local law enforcement.

The Honorable Amy Rosmarin

Page 2

Thank you for your interest in this important matter. The co-signers of your letter will receive a separate, identical response. Should you require any additional information about the National Protection and Program Directorate's Office of Infrastructure Protection please do not hesitate to contact us at (703) 235-8110.

Sincerely,

A handwritten signature in black ink, appearing to read 'Caitlin Durkovich', written over a horizontal line.

Caitlin Durkovich  
Assistant Secretary

cc: John Melville, Executive Deputy Commissioner, New York Division of Homeland Security and Emergency Services

Brian Wright, Director, Critical Infrastructure Program, New York Division of Homeland Security and Emergency Services

# **Official Transcript of Proceedings**

## **NUCLEAR REGULATORY COMMISSION**

Title: 10 CFR 2.206 Petition Review Board  
RE Indian Point Nuclear Generating Unit

Docket Number: 05000247 and 05000286

Location: teleconference

Date: Wednesday, January 28, 2015

Edited by Douglas Pickett

Work Order No.: NRC-1342

Pages 1-48

**NEAL R. GROSS AND CO., INC.**  
**Court Reporters and Transcribers**  
**1323 Rhode Island Avenue, N.W.**  
**Washington, D.C. 20005**  
**(202) 234-4433**

1 UNITED STATES OF AMERICA  
2 NUCLEAR REGULATORY COMMISSION  
3 + + + + +  
4 10 CFR 2.206 PETITION REVIEW BOARD (PRB)  
5 CONFERENCE CALL  
6 RE  
7 INDIAN POINT  
8 + + + + +  
9 WEDNESDAY  
10 JANUARY 28, 2015  
11 + + + + +

12 The conference call was held, Christopher  
13 Miller, Chairperson of the Petition Review Board,  
14 presiding.

15  
16 PETITIONER: PAUL BLANCH

17  
18 PETITION REVIEW BOARD MEMBERS

19 Christopher Miller, Chairperson  
20 Lee Banic  
21 Thomas Setzer  
22 Rob Carpenter  
23 Dave Beaulieu  
24 Dave Cylkowski  
25 Ben Beasley

1 PETITION REVIEW BOARD MEMBERS (Continued)

2 Paul Prescott

3 Tahirih Solomon

4 Rao Tammara

5 Mike McCoppin

6 Dori Willis

7 Greg Oberson

8 Diane Render

9 Sergiu Basturescu

10 Doug Tifft

11 Stella Opara

12 Doug Pickett

13 Gladys Figueroa

14 Neil Sheehan

15 Sergiu Basturescu

16 Paul Prescott

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MR. PICKETT: Good afternoon. Again, my name is Doug Pickett. I'm the Indian Point project manager in NRR in Rockville, Maryland. We're here today to allow the Petitioner, Mr. Paul Blanch, assisted by Mr. Richard Kuprewicz of Accufacts, Incorporated, to address the Petition Review Board, also referred to as the PRB, regarding the 2.206 petition submitted by Mr. Blanch on October the 15th, 2014. I am the petition manager for the petition and the PRB Chairman is Mr. Christopher Miller.

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As part of the PRB's review of this petition Mr. Paul Blanch has requested this opportunity to address the PRB. This meeting is scheduled from 2:30 to 3:30 this afternoon.

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The meeting is being recorded by the NRC Operations Center and will be transcribed by a court reporter. The transcript will become a supplement to the petition. The transcripts will also be made publicly available.

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I'd like to open this meeting with introductions. As we go around the room here in Rockville, Maryland, please be sure to clearly state your name, your position and the office that you work

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

J.A. - 1519  
(202) 234-4433



1 for within the NRC. We're going to start introductions  
2 with myself here in Rockville, Maryland.

3 I'm Doug Pickett, the petition manager.

4 CHAIRMAN MILLER: And I'm Chris Miller.  
5 I'm with the Division of License Renewal in the Office  
6 of Nuclear Reactor Regulation, and I'll be the PRB  
7 Chair.

8 MS. RENDER: I'm Diane Render from the  
9 Division of Operating Reactor Licensing, project  
10 manager.

11 MR. MCCOPPIN: Mike McCoppin. I'm Chief  
12 of the Radiation Protection and Accident Consequences  
13 Branch, Office of New Reactors.

14 MR. TAMMARA: My name is Rao Tammara. I'm  
15 the technical reviewer, NRO.

16 MR. COLYER: Eddie Colyer, project  
17 manager, Health Quality and Rulemaking.

18 MS. Banic: Lee Banic, NRR petition  
19 coordinator.

20 MR. BLANCH: Yes, could people speak up a  
21 little bit? I'm having trouble hearing.

22 PARTICIPANT: Can't hear.

23 MR. CYLKOWSKI: David Cylkowski. I'm an  
24 attorney in the Office of General Counsel.

25 MS. SOLOMON: Tahririh Solomon, the senior

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1 special agent with the Office of Investigations.

2 MR. CARPENTER: Rob Carpenter, Office of  
3 Enforcement, enforcement specialist.

4 MR. BEASLEY: Ben Beasley. I'm a branch  
5 chief in the Division of Operating Reactor Licensing.

6 MS. WILLIS: Dori Willis. I'm the team  
7 lead for Allegations and Enforcement in NRR.

8 MR. HARRIS: Brian Harris, project  
9 manager, DPR.

10 MR. OBERSON: Greg Oberson, materials  
11 engineer, Office of Nuclear Regulatory Research.

12 MS. SPIRA: Mattie Spira, Office of  
13 Enforcement.

14 MS. OPARA: Stella Opara, NRR, allegations  
15 specialist.

16 MR. PICKETT: We have completed the  
17 introductions in the NRC headquarters. You can tell  
18 we've got quite a few people in a lot of areas of  
19 expertise being represented.

20 At this time we'd like to know is there  
21 anybody else from NRC headquarters on the phone?

22 MR. PRESCOTT: Yes, Paul Prescott from the  
23 Office of NRO, Quality and Vendor Inspection Branch.

24 MR. BASTURESCU: Sergiu Basturescu, NRR,  
25 Technical Review.

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1 MR. PICKETT: Okay. Anyone else from NRC  
2 headquarters?

3 (No audible response)

4 MR. PICKETT: And is there anyone from NRC  
5 from the regional office on the phone?

6 MR. SHEEHAN: Neal Sheehan, Office of --  
7 (Simultaneous speaking)

8 MR. PICKETT: I'm sorry, we heard Neal  
9 Sheehan and who else?

10 MR. BURRITT: Art Burritt.

11 MR. PICKETT: Okay.

12 MR. SETZER: Doug, Tom Setzer, Region I.

13 MR. PICKETT: Okay. And the Licensee,  
14 Entergy, could you please introduce who you have on the  
15 phone?

16 MR. WALPOLE: Sure, Doug. It's Bob  
17 Walpole, Manager; Steve Prussman from Regulatory  
18 Assurance; and Rich Drake, our civil engineering  
19 supervisor.

20 MR. PICKETT: Okay. Mr. Blanch, Mr.  
21 Kuprewicz, would you please introduce yourselves along  
22 with anyone else that's with you for the record?

23 MR. BLANCH: Yes, this is Paul Blanch.  
24 I'm an energy consultant and the Petitioner. I'd like  
25 to introduce Rick Kuprewicz, who will be also making a

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1 statement. I'd like to thank Jerry Shapiro of Senator  
2 Gillibrand's office; Dana Levenberg, who will also be  
3 making a brief statement; and Sara Levine of  
4 Assemblywoman Lowey's office. And I'd like to say hi  
5 to old friends Bob Walpole and Paul from Morgan Lewis.

6 MR. PICKETT: Okay. It's not required for  
7 members of the public to introduce themselves for this  
8 call, however, if there are members of the public; and  
9 I understand there are, could you please identify  
10 yourself at this time?

11 MS. CLAIRE: Paula Claire, Garrison, New  
12 York.

13 MS. GLIDDEN: Susanna Glidden, North  
14 Salem, New York.

15 MS. ROSEMARY: Emily Rosemary,  
16 councilwoman, Town of North Salem.

17 MS. McDONALD: Susan McDonald, New York.

18 MS. VAN DOLSEN: Susan Van Dolsen,  
19 Harrison, New York.

20 MR. PICKETT: Could we do those again, the  
21 last two. Susan McDonald I heard and --

22 MS. VAN DOLSEN: Susan Van Dolsen,  
23 Harrison, New York.

24 MR. PICKETT: Thank you.

25 MS. VANN: Nancy Vann, Peekskill, New

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1 York.

2 MR. HOUSTON: William Houston,  
3 Binghamton, New York.

4 MR. BESSETTE: Paul Bessette, Morgan  
5 Lewis.

6 MS. WISER: Ellen Wiser, White Plains, New  
7 York.

8 MS. SPEAR: Susan Spear, Office of U.S.  
9 Senator Kirsten Gillibrand.

10 MR. LOCHBAUM: Dave Lochbaum, Union of  
11 Concerned Scientists.

12 MR. PICKETT: Okay.

13 MS. LEVENBERG: Dana Levenberg, New York  
14 State Assemblywoman Sandy Galef's office.

15 MS. LEVINE: Sara Levine, Congresswoman  
16 Nita Lowey's office.

17 MR. PICKETT: Okay. If there's no one  
18 else, I'd like to emphasize that we each need to speak  
19 clearly and loudly to make sure that the court reporter  
20 can accurately transcribe this meeting. If you have  
21 something to say, we'd like you to first state your name.  
22 For those dialing into the meeting, please remember to  
23 mute your phones to minimize any background noise or  
24 distractions. If you do not have a mute button, you can  
25 do this by pressing the star, six buttons. To un-mute,

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1 press the star, six keys again.

2 At this time I'll turn this over to the PRB  
3 Chairman, Chris Miller.

4 COURT REPORTER: Mr. Pickett, this is the  
5 court reporter. Before you proceed with the call this  
6 afternoon, at the conclusion of the call could you  
7 provide me with a service list of the names of everyone  
8 on the call? People that registered to speak and party  
9 members.

10 MR. PICKETT: I can certainly give the  
11 names of the NRC folks. I was hoping to rely on you to  
12 get the names of everybody else.

13 COURT REPORTER: So do you have a list of  
14 people who are registered to speak?

15 MR. PICKETT: This call is also being  
16 recorded by the NRC Operation Center, so we can go back  
17 over the recording.

18 COURT REPORTER: All right. Thank you.

19 MR. PICKETT: I'll help you out with that.

20 COURT REPORTER: Sure. Thanks.

21 MR. PICKETT: Okay.

22 CHAIRMAN MILLER: Thank you. And good  
23 afternoon, everyone. Thanks for convening with us  
24 today and agreeing to provide information. Thank you,  
25 Mr. Blanch and Mr. Kuprewicz. I'm Chris Miller and I'm

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1 looking forward to hearing the information you have to  
2 provide for us.

3 I'd like to first share some background on  
4 the process that we're using. Section 2.206 of Title  
5 10 of the Code of Federal Regulations process is the  
6 primary mechanism for the public to request enforcement  
7 action by the NRC in a public process. This process  
8 permits anyone to petition the NRC to take  
9 enforcement-type action related to NRC licensees or  
10 licensed activities. Depending on the results of its  
11 evaluation, the NRC could modify, suspend or revoke an  
12 NRC-issued license or take any other appropriate  
13 enforcement action to resolve a problem. The staff  
14 guidance for the disposition of this 2.206 petition  
15 request is in Management Directive 8.11, which is  
16 publicly available on our Web site.

17 Today's meeting's purpose is to give the  
18 Petitioner, Mr. Blanch, an opportunity to provide any  
19 additional explanation or support for the petition  
20 before the Petition Review Board's initial  
21 consideration and recommendation.

22 So we have the initial documents that you  
23 sent, and I believe you supplemented with some  
24 additional items, Mr. Blanch, today. They came to us  
25 at the last minute and I don't know if everybody on the

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1 Board has gotten a chance to look at all of them, but  
2 we do have them and we'll take them into consideration  
3 when the Panel meets.

4 So, a couple of things. This meeting is  
5 not a hearing. It's not an opportunity for the  
6 Petitioner to question the NRC or the PRB about the  
7 merits of the issues presented in the petition request.  
8 It's really an opportunity for you to give us a fuller  
9 picture, us, the members of the Board, a fuller picture  
10 that we can work from in making our deliberations.

11 No decisions regarding the merits of this  
12 petition will be made at this meeting.

13 Following the meeting the Petition Review  
14 Board will conduct its internal deliberations and then  
15 the outcome of the internal meeting will be discussed  
16 with the Petitioner, Mr. Blanch.

17 The Petition Review Board typically  
18 consists of a chairman, usually a manager at the senior  
19 executive level who serves with the NRC. And you've  
20 heard some of the other -- that's myself. And then a  
21 petition manager, which is Doug, and a PRB coordinator.  
22 Other members of the Board are determined by the NRC  
23 staff based on the content of the information in the  
24 petition request.

25 As described in our process, the staff may

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1 ask clarifying questions in order to better understand  
2 the Petitioner's presentation and reach a reasoned  
3 decision whether to accept or reject the Petitioner's  
4 request for review under the 2.206 process. And we'll  
5 try to do that at the end of the call. We'll listen to  
6 everything that you and your speakers have, Mr. Blanch,  
7 and then we'll try to ask if there's any clarifying  
8 questions or any additional information that we think  
9 that members of the Board may need to ask of you.

10 With that being said, I want to summarize  
11 the scope of the petition under consideration and the  
12 NRC activities to date. On October 15th Mr. Blanch  
13 submitted a 2.206 petition to the NRC regarding the 10  
14 CFR 50.59 site hazards analysis prepared by Entergy  
15 Nuclear Operations, the Licensee, for Indian Point  
16 Nuclear Generating Stations 2 and 3.

17 The 50.59 analysis was performed by the  
18 Licensee to determine the safety impact on the Indian  
19 Point plant due to Spectra Energy's proposed 42-inch  
20 diameter natural gas pipeline that has plans to traverse  
21 a portion of the owner-controlled property at the Indian  
22 Point facility.

23 In the petition Mr. Blanch requests that  
24 the NRC take the following enforcement actions against  
25 Entergy, the Licensee, for the following violations:

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1 Violation of 10 CFR 50.59, Completeness and Accuracy of  
2 Information, for providing inaccurate and incomplete  
3 information in the 50.59 site hazards analysis;  
4 violation of 10 CFR 50, Appendix B, Quality Assurance  
5 Criteria for Nuclear Plants and Fuel Reprocessing  
6 Plants, for relying on a contractor who was not  
7 qualified in accordance to Appendix B requirements, was  
8 not qualified in accordance with Entergy Quality  
9 Assurance Program, and, as a result, was not qualified  
10 to perform an analysis for such significant  
11 safety-related issue; and violation of 10 CFR 50.59,  
12 Changes, Tests and Experiments, for failing to perform  
13 the necessary safety evaluation requirements.

14 Furthermore, in the petition, Mr. Blanch  
15 requested that the NRC issue a demand for information  
16 against Entergy for the following: Demand an  
17 explanation from Entergy seeking an explanation as to  
18 why the previously identified violations do not also  
19 constitute a violation of 10 CFR 50.5, Deliberate  
20 Misconduct; demand that Entergy seek the results of a  
21 new and realistic risk hazard analysis consistent with  
22 the guidance providing in OSHA Appendix C, Section  
23 1910.119, Compliance Guidelines and Recommendations  
24 for Process Safety Management; and demand that Entergy  
25 attest to the completeness and accuracy of Entergy

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1 Report IP-PRT-08-00032, prepared in August 2008 that  
2 assessed the safety impact of the existing 26 and  
3 30-inch diameter natural gas pipelines that traverse  
4 the owner-controlled property in Indian Point.

5 That report was performed by the same  
6 contractor that performed the current site hazards  
7 analysis for Entergy. In addition, the report from  
8 August 2008 contributed to NRC's rejection of a previous  
9 2.206 petition submitted by Mr. Blanch concerning the  
10 existing natural gas pipelines.

11 The Petitioner has also supplemented his  
12 original petition with the following: The Town of  
13 Cortlandt, New York contracted with Accufacts,  
14 Incorporated to perform a review and analysis of the  
15 proposed Spectra Energy natural gas pipeline and how it  
16 may affect Cortlandt.

17 The Blanch petition is supplemented by the  
18 Accufacts letter dated November 3rd, 2014 that is  
19 critical of Entergy's 50.59 site hazards analysis and  
20 characterizes it as seriously deficient, inadequate and  
21 under-representing the real risks.

22 Point 2, the Petitioner letter dated  
23 November 11th, 2014 discusses the proposed West Point  
24 Partners' construction of a high voltage direct current  
25 transmission cable that may run near or adjacent to the

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1 proposed natural gas pipelines before tying into the  
2 Buchanan Switchyard. This letter also supplements the  
3 Blanch petition. The Petitioner has expressed concern  
4 that stray DC currents emanating from the high voltage  
5 cable could adversely impact the existing gas  
6 pipelines, the new gas pipelines, and underground  
7 safety-related components at the Indian Point facility.

8 And if I may discuss the NRC activities to  
9 date, on November 24th, 2014 the petition manager  
10 contacted the Petitioner to discuss the 2.206 process  
11 and to offer the Petitioner an opportunity to address  
12 the PRB by phone or in person. Petitioner requested to  
13 address PRB by phone prior to its internal meeting to  
14 make the initial recommendation to accept or reject the  
15 petition for review.

16 As a reminder for the phone participants,  
17 please identify yourself if you make any remarks as this  
18 will help in the preparation of the meeting transcript  
19 that will be made publicly available. And thank you.

20 Mr. Blanch, I'll turn to over to you and Mr.  
21 Kuprewicz to provide any information you believe the PRB  
22 should consider as part of this petition.

23 MR. BLANCH: Okay. This is Paul Blanch  
24 speaking again. With your introduction, which I  
25 appreciate, I'm sorry, that was Charles Miller is your

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1 name?

2 CHAIRMAN MILLER: Chris Miller.

3 MR. BLANCH: Chris Miller?

4 CHAIRMAN MILLER: Yes.

5 MR. BLANCH: Okay. You stated obviously  
6 that this is being conducted in accordance with 10 CFR  
7 2.206 and guidance provided by Management Directive  
8 8.11. And you made a statement that this is not an  
9 opportunity for questions by the Petitioner. I'm not  
10 sure where that statement originated. I've reviewed  
11 Management Directive 8.11 and it's clear certainly that  
12 the Licensee is allowed to ask questions and the NRC can  
13 ask questions and it does not prohibit the Petitioner  
14 from asking questions. Again, we don't have to get into  
15 the details of the Management Directive.

16 But secondly, this meeting is somewhat a  
17 follow up of a telephone conversation the NRC had in  
18 early December with various congressional  
19 representatives of the New York and Westchester area,  
20 and during that meeting and confirmed by a Mr. Doug  
21 Tifft, T-I-F-F-T, that Mr. Blanch would have an  
22 opportunity with meetings with the NRC staff and those  
23 meetings would include this conversation. So the  
24 inference there was that I myself would be able to  
25 address technical issues, and that's my primary

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1 interest. And the reason for my interest is primarily  
2 to decide whether I further want to amend my petition  
3 or take any other subsequent action, including -- well,  
4 whatever action I decide to take.

5 Again, I filed a Freedom of Information Act  
6 request for various documents related to the analysis,  
7 which has been totally redacted except for an  
8 introduction and one single reference, that reference  
9 being the submittal by Entergy of August 21st. We and  
10 the experts are extremely interested because we suspect  
11 there contains inaccurate information within the  
12 analysis, and I'll get into that a little bit later.

13 And other federal agencies, and Richard can  
14 expound on this. There's a process which I sent to you.  
15 It's called CEII, which allows members of the public and  
16 technical experts to sign an agreement to review various  
17 documents that are proprietary, confidential or could  
18 endanger the health and safety of the public, and so on  
19 and so forth. We'd like the NRC to consider entering  
20 into some type of agreement where our experts could  
21 review the Entergy and the NRC analysis, because we  
22 certainly believe that it contains questionable  
23 information at first, at best.

24 Our main concern, and there are many  
25 concerns; and Richard is probably the most qualified to

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1 speak on that, but in the summary of the analysis  
2 provided August 21st by Entergy there was an assumption  
3 that the gas flow would be terminated within three  
4 minutes of its initiation. And I don't mean detection,  
5 but initiation. And based on historical experience and  
6 research we certainly question that. And I'd like to  
7 stick with that primary point and have Richard speak to  
8 that, if that's okay.

9 Now, Richard, if you would like to speak on  
10 that particular three-minute isolation time.

11 MR. KUPREWICZ: Sure. Maybe my preamble  
12 is, because I haven't spoken up before, and if I'm not  
13 getting clear, please speak up because it's hard over  
14 the phone on conference.

15 Let me just give you a brief background  
16 here. I won't spend a lot of time. I don't usually  
17 waste a lot of time selling myself, but I've got over  
18 40 years experience in the energy industry, especially  
19 in incident investigations related to major pipeline  
20 failures. I've spent many years trying to improve  
21 pipeline safety regulations, especially after the  
22 terrible pipeline ruptures in Bellingham in '99 and in  
23 Carlsbad in 2001. That was a gas transmission line was  
24 the latter one. And in Bellingham it was a liquid line.  
25 Multiple loss of life, near loss of the city in

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1 Bellingham, and obviously a tragic loss of life in  
2 Carlsbad, a very remote area. It killed 12 people, 5  
3 of them children.

4           Anyway, I have assisted over many years in  
5 the improvement of pipeline safety regulation, trying  
6 to work with industry and various other parties,  
7 regulators as well as the public, usually representing  
8 the public as members on various committees. Many of  
9 those served in the development of pipeline safety  
10 regulation regarding integrity management, especially  
11 for transmission pipelines. And also in the area that  
12 may be very relevant to this particular subject, in the  
13 area of pipeline control room management. And those  
14 regulations have been promulgated and are now in  
15 regulation. And as again in all regulation, there's  
16 always a series of compromises, but hopefully you move  
17 the ball forward.

18           And I spent over 40 years trying to improve  
19 the area of control room management for not only  
20 refineries and chemical plants, but also in pipelines.  
21 I have very little tolerance for trying to blame the  
22 pipeline control room operator for some of these  
23 terrible incidents you've been seeing lately in the last  
24 10 or 15 or so years.

25           On the issue that may be very relevant here,

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1       you can get my CV. It's in the public domain. That  
2       will cover most of my documents that are in public. The  
3       investigations I've been brought into, that are  
4       hypersensitive are not in public domain, may involve  
5       criminal investigations, and I will not discuss any of  
6       that stuff. And I can bring lots of attorneys in on both  
7       sides of the fence that will try to protect that  
8       neutrality.

9               I am also a very experience HAZOP team  
10       leader, and I only mention that because a HAZOP team  
11       leader used to carry under law under OSHA a requirement  
12       that you had to be field experienced, operational  
13       experience to lead the team. I don't know if that's in  
14       the current regulations, but that doesn't mean a couple  
15       years. So again, the experience requirement is there  
16       to assure you're asking the right questions and then the  
17       parties can reach a rational reasonable conclusion.

18              Now, let me focus in on the specific issue  
19       of the claimed three-minute closure time for the valves.  
20       I think the report that I've seen that's in public  
21       indicates that they'll close the valves in three minutes  
22       under the impression that that will actually stop the  
23       gas burning, or the gas explosions, more likely  
24       explosions than gas burning, within a three-minute time  
25       period. And I'll just tell you that my extensive

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1 experience in this area, you won't even necessarily  
2 recognize this within three minutes, much less within  
3 a control room many, many miles away, take the  
4 appropriate actions to try to initiate actions to shut  
5 down, close -- shut some compressors and close valves.  
6 That can go for quite some time.

7 Now, in all fairness I need to point out in  
8 the San Bruno pipeline rupture, a slightly different  
9 animal, smaller line, lower pressure, not necessarily  
10 remote-operated valves, but that burned for over 90  
11 minutes. Okay? And in that particular location the  
12 fire department was several hundred yards down the  
13 street. Okay? So my point is in these terrible  
14 tragedies -- nobody wants a pipeline rupture, but in  
15 these large diameter pipeline ruptures all kinds of  
16 dynamics and noise interfere so that what happens is a  
17 guy in a control room may or may not get information in  
18 a manner allowing him to make what I'll call executive  
19 decisions to take the appropriate action to handle a gas  
20 pipeline rupture. So time can go very quickly in a  
21 control room.

22 And so in this particular case I would say  
23 the illusion of a closure time in three minutes is -- it  
24 may be after you push the buttons to do that, you may  
25 be designed to do that, but the real relevant issue that

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1 this Panel I think needs to consider is the actual  
2 dynamics that in the event of a pipeline rupture in this  
3 sensitive location, the system dynamics will  
4 substantially delay the recognition and the appropriate  
5 shutoff and responses such that gas will explode and  
6 burn for quite a period of time. Right?

7 I need to just comment on one other issue  
8 that's often confusing, and that is in federal pipeline  
9 safety regulation there's an animal called the  
10 potential impact radius that's used to decide what we  
11 think might be the potential impact from a gas  
12 transmission pipeline rupture. That animal was never,  
13 ever intended -- and FERC knows this. I've said this  
14 in enough cases under oath, that that was a screening  
15 tool to help define high consequence areas. And I've  
16 also said under oath in other cases that the PIR was  
17 meant to help identify high consequence areas and should  
18 not be used to cite the consequences of pipeline  
19 ruptures.

20 As it turns out, the larger the diameter of  
21 the pipeline, the potential impact radius moves in the  
22 right direction, but the actual impact radius can be  
23 much larger. And I have said to PHMSA on more than one  
24 occasion, trying to go through a cycle to improve the  
25 regulations for larger diameter pipelines, that became

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1 very evident -- that there was a problem in the federal  
2 regulations that became very evident after the San Bruno  
3 rupture. And even the NTSB acknowledges this, there's  
4 something not quite right with this PIR equation for  
5 larger diameter pipelines.

6 Now with that said, I think the fundamental  
7 issue here from my perspective is if the pipeline were  
8 to rupture either as a 30-inch or a 42-inch; because the  
9 issues goes beyond just the 42-inch, would it generate  
10 blast? And the answer probably is mostly likely,  
11 though there are ruptures that don't generate blasts.  
12 They're rare. When I say "blasts," I mean blasts from  
13 the ignition of the gas cloud that is mixed with the  
14 turbulent action. And most likely in a rupture you'll  
15 get multiple blasts.

16 From what I have seen of the layout; and  
17 again, I haven't seen a complete detail of the layout,  
18 I don't expect blast forces because -- like major damage  
19 to like the reactor buildings or anything, because  
20 they're pretty reinforced, but the question would be  
21 would possible blast generated cause damage to  
22 structures that might be what I'd call safety- critical  
23 that would interfere with the possibility of having the  
24 fail-safe shutdown of the Reactors 2 and 3? And I don't  
25 have an answer to that one. I'll be very frank with you.

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1 I would tell you this: Blast forces tend  
2 to dissipate. They're situation-specific. And from  
3 what I've seen I would expect that there are blast  
4 forces. While they will kill, they wouldn't  
5 necessarily damage a lot of structure because they  
6 dissipate quickly with distance. So the controlling  
7 issue regarding this from my perspective and experience  
8 is the tremendous amount of heat flux generated from  
9 these high-tonnage release gas transmission pipeline  
10 ruptures that have ignited.

11 And what happens is the higher the heat  
12 flux, the longer the duration, the more damage that can  
13 occur. I would expect extensive damage to auxiliary  
14 equipment such as transmission pipelines and equipment  
15 that might be related to fail-safe shutdown of the  
16 reactor facilities themselves.

17 And that's where I brought the very simple  
18 question in my report. In the event of a rupture of a  
19 sustained duration; it's going to be longer than three  
20 minutes given the transient dynamics on this system,  
21 what equipment would be affected and would it interfere  
22 with the fail-safe shutdown of the plant? I don't have  
23 an answer for you on that. I can tell you the burns will  
24 be substantially longer than three minutes with  
25 significantly high heat fluxes.

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1 That's about it for me.

2 MR. BLANCH: Thank you very much, Richard.  
3 Does anyone have any questions for what Richard just  
4 said?

5 Mr. PICKETT: Excuse me. I just take it  
6 -- I do have a question for Mr. Kuprewicz. And I am  
7 no --

8 MR. KUPREWICZ: Who's speaking?

9 MR. PICKETT: Doug Pickett. I am no pipe  
10 expert like you are, Mr. Kuprewicz, but in layman's  
11 terms, and I think I probably represent a lot of the  
12 people in the room here, when we think about a 42-inch  
13 gas line breaking, we would imagine a major explosion,  
14 but after that we would think this would be like  
15 effectively a torch and it wouldn't matter whether the  
16 valve closed in three minutes or three hours. Now am  
17 I wrong in my thinking?

18 MR. KUPREWICZ: Well, first of all,  
19 there's no dumb question, so please do not hesitate to  
20 ask, if you can. If I'm not clear, then please ask.  
21 I'm not here to give a speech.

22 That's a fair question you ask. The  
23 tonnage release on these, especially these large  
24 diameter pipelines are such that you can expect to see  
25 multiple detonations, multiple blasts. The initial

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1 blast will probably be the highest force one. And so  
2 when you do site-specific blast pressure waves from the  
3 tonnage release and time to ignition, usually the  
4 initial blast ignition will have the greatest force.  
5 But then what will happen, because the gas releases are  
6 so great and the air cloud mixture is so turbulent,  
7 you'll see multiple secondary blasts, but they won't be  
8 as significant as the first one.

9 But those blast pressure waves will  
10 -- again, the science will tell you they dissipate quite  
11 quickly with distance. So if you're in a real congested  
12 area, that will contribute to the blast forces. But  
13 from what I've seen of the structure spacing, I think  
14 if you sat down and went through the detail of the layout  
15 of the critical structures at Indian Point, while blasts  
16 can be an issue of concern, my less-than-informed  
17 opinion at this stage given the limited information that  
18 can be made public is that while blasts can damage  
19 structures and actually cause some building failures,  
20 I don't think it will necessarily -- it won't interfere  
21 with the reactors structures. They're pretty  
22 hardcore.

23 So you'll get multiple blast explosions,  
24 but that's not the controlling factor. The controlling  
25 factor is the tremendous heat flux and the duration of

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1       that heat flux. I have seen the heat fluxes so high that  
2       they will liquify steel at a distance and vaporize  
3       aluminum. And I'm not saying that to scare anybody. I  
4       just want everybody to understand if that occurs, what's  
5       that do to the equipment that could be used to fail-safe  
6       the plant? If it can't affect the plant and the plants  
7       can still be fail-safed, then even in a tremendous  
8       tragedy such as a rupture the plant is protected. And  
9       then I'd have to say I don't like rupture, but I can tell  
10      you that the plant would be protected. But I can't say  
11      that. I can't come to that conclusion from what I've  
12      seen to date.

13               DR. GAVIN: Well, I'm just trying to get a  
14      better understanding of the difference between the  
15      valves closing in three minutes versus three hours.  
16      And it sounds like the heat flux is the limiting factor.

17               MR. KUPREWICZ: Well, I think that --  
18      Well, no, no. Let me be real clear here: There's more  
19      than just the time to close the valves. You have to  
20      recognize that while you have a rupture; and it won't  
21      be pressure drop, okay, the dynamics of where this pipe  
22      is located in proximity to the compressor station you  
23      would most likely not see pressure drop. So you won't  
24      see pressure drop alarms for quite a while in the control  
25      room that may be 1,000 miles away. And that's not the

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1 control room operator's fault. Okay?

2 The dynamics, the way the rupture will  
3 work, the way a pipeline ruptures, it unzips in a  
4 microsecond. It totally casts out pipe steel in all  
5 directions and forms these huge craters and then the gas  
6 roars at the speed of sound coming out of the pipe and  
7 the gas, the speed of the sound and the gas, which is  
8 higher than the velocity of the speed of sound and air.  
9 That's why you hear these roars and nobody can figure  
10 out what it is.

11 So my point is that if you had a rupture,  
12 it's going to be awhile before somebody in a control room  
13 gets the word that you might have a rupture. And that's  
14 going to be more than probability. If you ran the  
15 transient dynamics and you were trying to figure this  
16 out, you were trying to estimate how much time would it  
17 take before we'd understand we had a rupture and gave  
18 the command to close valves, it may be many, many  
19 minutes.

20 Mr. Pickett: Okay. Thank you.

21 MR. BLANCH: Yes, and this is Paul  
22 following up. We do have other structures. We have  
23 the gas turbine fuel oil tanks that are located in a very  
24 close proximity which hold hundreds, maybe millions of  
25 gallons of jet fuel oil which would flow downhill. We

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1 have other vital structures. We have the switchyard.  
2 We have transformers. We have vital tanks that are used  
3 for cooling which are in the high-heat flux and blast  
4 radius.

5 We also have information that the flow in  
6 the existing lines, the 26 and 36-inch lines, may in fact  
7 be changed through this modification. We do not know  
8 if this has been addressed.

9 MR. KUPREWICZ: Yes, and that's a good  
10 point. And I didn't mention this, but Paul has brought  
11 up a good point. If that jet fuel tank is part of your  
12 fail-safe system, and if I understand it's within 150  
13 feet of this pipeline, blast radius will take the tank  
14 out. Okay?

15 Now, if you don't need it to fail-safe the  
16 plant, it'll burn, it may even explode, but it won't  
17 necessarily -- if you don't need it to fail-safe the  
18 plant, then from my perspective I don't like it, but it's  
19 not going to jeopardize the plant.

20 MR. BLANCH: Well, it will burn -- it will  
21 be hundreds of thousands of gallons of burning fuel  
22 flowing down into safe-related structures.

23 MR. KUPREWICZ: Okay. If you know the  
24 detail, because I don't --

25 (Simultaneous speaking)

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1 MR. BLANCH: That's why I --

2 (Simultaneous speaking)

3 MR. KUPREWICZ: -- the risk analysis would  
4 look at.

5 MR. BLANCH: That's why I sent you the plan  
6 view of a site showing elevations and distances. And  
7 you can see it flows right down near safety-related  
8 structures, which we all know what they are. The  
9 switchyard will be taken out. There are other vital  
10 components that will be taken out.

11 The bottom line here is that none of us know  
12 everything about this. I certainly don't. Richard  
13 will admit he doesn't know everything about nuclear  
14 safety, and we all have our shortcomings. And we  
15 desperately need to have the ability to review this  
16 analysis and FERC has a procedure for allowing it called  
17 CEII, which I don't know what means, but we can sign  
18 confidentiality agreements for the very purpose that  
19 you said we can't have it.

20 I have security clearance. I have worked  
21 at Indian Point and other plants. Richard has security  
22 clearance. Any other experts that we decide to bring  
23 on would have the security clearance to review the  
24 analysis and make sure it's complete and considered  
25 everything.

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1                   We have significant safety issues, and  
2                   we're not talking like in Connecticut where it killed  
3                   seven people. We are talking tens of millions of people  
4                   that could be endangered by releases from Indian Point.  
5                   And we cannot take this lightly.

6                   We cannot believe for instance the  
7                   three-minute closure time, the fact that vital  
8                   structures will not be jeopardized. Flow in the  
9                   existing lines, which you said before in the final  
10                  safety analysis report that the rupture of those lines  
11                  is not feasible, yet it is feasible in the new lines.  
12                  I mean, either you're telling me the truth now or  
13                  something is amiss here. We have a probability of zero  
14                  for one line and a finite probability for another.

15                  We absolutely need an independent  
16                  assessment of the analysis, and that is what we're  
17                  questioning. And I think that we need to pursue this,  
18                  that the NRC has to check with its management for an  
19                  independent review, whether we do it in cooperation with  
20                  Spectra, Entergy, NRC. That's fine with us. We'd love  
21                  to hear all inputs. But it's an absolute necessity that  
22                  further review be done by the experts in these various  
23                  disciplines, especially Richard, and including myself,  
24                  who has knowledge of Indian Point Nuclear Power,  
25                  knowledge of the regulations, knowledge of the risks.

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1 I have met with the chairman's office on  
2 issues similar to this where the chairman at the time  
3 allowed me to meet and shared with me information that  
4 is not necessarily publicly available. That is what we  
5 are asking in addition to the requests of the 2.206  
6 petitions.

7 Again, I think that's pretty much what I  
8 want to say, and I would like to hear from Congresswoman  
9 Lowey's office by way of Dana Levenberg and hear some  
10 of her statements, if she is ready to make some  
11 statements. Dana?

12 MS. LEVENBERG: Sorry, I was on mute. Hi,  
13 I'm sorry. Just to clarify, Dana Levenberg,  
14 L-E-V-E-N-B-E-R-G, and I'm from New York State  
15 Assemblywoman Sandy Galef's office, so a state  
16 representative, not a congressional representative.

17 I just wanted to reiterate the  
18 assemblywoman has as recently as January 15th submitted  
19 a letter to the Secretary of FERC, as well as the  
20 chairman of the NRC underscoring her extreme concern  
21 that this independent risk assessment that was done both  
22 by Entergy and -- I mean, that the assessment that was  
23 done both by Entergy and NRC has experts like Rick and  
24 Paul overseeing it, looking at it, reviewing it, or even  
25 conducting their own analysis with the relevant

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1       pertinent information that has been provided. And  
2       again, Paul laid out some possibilities. I'm not sure  
3       what the one that would be best for NRC is. She's  
4       extremely concerned that the issues that have been  
5       brought forth by these two experts preclude the safe  
6       siting of a larger pipeline so close to Indian Point.

7               She also wanted to make sure that as she  
8       understands it there's no precedent for this type of  
9       proximity and this size of gas line to be so close to  
10      a nuclear power plant. And this is the most critical  
11      nuclear power plant in our nation, one that has the NRC's  
12      -- maybe the most eyes on this plant, more so than maybe  
13      any other because its proximity to New York City.

14             And the radius of the impact of a blast and  
15      additionally the heat that would create these other  
16      issues that Mr. Kuprewicz has pointed out, based on the  
17      fact that this three-minute assumption that was used and  
18      that was articulated by the NRC expert on a phone call  
19      that the assemblywoman organized with some  
20      congressional offices, is sort of the most important  
21      issue that has come up, in her opinion, that precludes  
22      this from actually making any sense for this pipeline  
23      to be sited so close to Indian Point.

24             It is really a great and dire concern for  
25      her and for the safety and well-being of the

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1 constituents she represents in the 95th Assembly  
2 District, which includes Montrose, Buchanan, the Town  
3 of Cortlandt, Croton, Peekskill and many of the other  
4 areas that would be directly impacted by any sort of  
5 rupture or an issue with the gas line that would impact  
6 Indian Point. So she really wants to make sure that  
7 some sort of analysis, an independent assessment of the  
8 analysis with cooperation of these types of experts be  
9 undertaken and either looking at again -- once again  
10 either looking at what's already been done with these  
11 experts or starting from scratch and undertaking  
12 something that's truly independent. That's  
13 it.

14 MR. KUPREWICZ: I might just want to  
15 interject here a process risk analysis doesn't take like  
16 man months, so that's just the basic --

17 (Simultaneous speaking)

18 PARTICIPANT: Sir, could you state your  
19 name?

20 MR. KUPREWICZ: -- probably thinks this  
21 is --

22 MS. LEVENBERG: I don't know what that  
23 means.

24 MR. KUPREWICZ: It's something that you  
25 get the right players in a room and they're cooperative

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1 and open. Then you can get there fairly quickly. It  
2 doesn't take weeks. It doesn't even take a day if you  
3 really get the right people together.

4 MS. LEVENBERG: I'm sorry. Who's  
5 speaking?

6 MR. KUPREWICZ: Nor am I advocating that it  
7 has to be me. I'm not --

8 MS. LEVENBERG: Oh, is this Rick? Is this  
9 Rick? I didn't know who was speaking. Okay.

10 MR. KUPREWICZ: Oh, I'm sorry. I don't --

11 MS. LEVENBERG: It's Rick.

12 MR. KUPREWICZ: -- the problem with cell  
13 phones.

14 MS. LEVENBERG: Yes.

15 MR. KUPREWICZ: This is Rick Kuprewicz.

16 MS. LEVENBERG: Okay.

17 MR. KUPREWICZ: So, the right players in a  
18 room, including the Government folks, if they want to  
19 be there, you get the right questions addressed with the  
20 right information and then that hazard analysis or  
21 something like that can go very quickly. Again though,  
22 we know that some of this will be hypersensitive, and  
23 so everybody has to respect that, too. Anyway --

24 (Simultaneous speaking)

25 MR. BLANCH: And I think it's safe to say

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1 -- this is Paul Blanch -- safe to say that, speaking for  
2 myself, we would more than be willing to involve the  
3 experts from the NRC, the experts from Spectra and from  
4 Entergy such that we could hear all sides.

5 MR. KUPREWICZ: Fair call.

6 MS. GLIDDEN: This is Susanna Glidden.  
7 Congresswoman Lowey's aid is ready to say something,  
8 too.

9 MS. LEVINE: Well, actually, thank you,  
10 but this is Sara from Congresswoman's Lowey's office,  
11 Sara Levine, L-E-V-I-N-E. I am unfortunately not  
12 making a statement today. I'm here just to listen and  
13 observe. But thank you.

14 MS. GLIDDEN: Well, thank you, Sara.

15 MR. BLANCH: Dave Lochbaum, do you have any  
16 comments?

17 (No audible response)

18 MR. BLANCH: I guess not.

19 CHAIRMAN MILLER: Thank you, Paul. Is  
20 there any other information you want to pass before I  
21 ask the Panel and those listening in if they have any  
22 questions?

23 MR. BLANCH: Yes, there's one other  
24 statement that I want to make. Again, my petition is  
25 alleging wrongdoing on behalf of Entergy in submitting

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1       inaccurate incomplete information, and it appears to me  
2       the NRC has already made a determination in its  
3       inspection report that this information is accurate.  
4       And how can we be assured of an independent assessment  
5       of this petition if it's the same chain of command that  
6       has already approved and said this information is  
7       accurate? That's an outstanding question and I'm not  
8       sure how we can get true independence. And according  
9       to Management Directive 8.11; and I know there was  
10      someone from the Office of Investigation, if there is  
11      an allegation of wrongdoing, which there is, the Office  
12      of Investigations has to be heavily involved with this  
13      assessment of the 2.206 petition.

14                   CHAIRMAN MILLER: So, Paul, this is Chris  
15      Miller, and I just wanted to give you my short discussion  
16      of one of the things that the Panel is going to consider  
17      is if there's any allegations that we need to look at  
18      and move forward, if we move forward with any  
19      allegations from the material provided, the Office of  
20      Investigations will be a part of that, will be in on  
21      those discussions. That's how we do it in our normal  
22      allegation process. So the 2.206 Board will actually  
23      look and see if there are any new allegations that come  
24      up as a result of this.

25                   MR. BLANCH: And I personally am not

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1 advocating the treatment of this 2.206 as an allegation.

2 CHAIRMAN MILLER: Okay. Thank you.  
3 Anything else that you want to provide to the Board  
4 before we go around for questions?

5 MR. BLANCH: I think again I'd like to  
6 reemphasize the possibility of an independent analysis  
7 which would include the parties that I mentioned before  
8 and some process where we could sign some type of  
9 confidentiality agreement to have access to the  
10 information that the NRC has restricted.

11 And the other question I have is for this  
12 three-minute isolation time. In the response to my  
13 FOIA request the references were not redacted, however,  
14 there was no reference to how this three-minute time was  
15 come up with, and I would like to see the reference for  
16 how the NRC determined that the three-minute time is  
17 sufficient.

18 CHAIRMAN MILLER: Okay. I've got that  
19 note. Let me ask around the table here at headquarters  
20 first. Is there anyone that has questions for Mr.  
21 Blanch or any of the presenters?

22 (No audible response)

23 CHAIRMAN MILLER: Seeing none, anybody  
24 from the regions?

25 MR. SETZER: Thank you, no, Chris.

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1 CHAIRMAN MILLER: Okay. Anyone from  
2 members of the public that have questions for Mr.  
3 Kuprewicz or Mr. Blanch or the presenters?

4 MS. VAN DOLSEN: This is Susan Van Dolsen.  
5 I'm a member of the public. I just was wondering about  
6 the precedent. There was evidently some sort of  
7 independent risk assessment done for the Vermont Yankee  
8 plant in 2008. And so there was something  
9 commissioned. I think it was through the State of  
10 Vermont. Would it require like someone at the state  
11 level to do this, or is this something -- I just was  
12 curious as how to proceed forward if you were not willing  
13 to do it, if there's another way we could try to go  
14 forward.

15 MR. PICKETT: Can you help us out? Are you  
16 talking about a natural gas pipeline at Vermont Yankee  
17 or something --

18 MS. VAN DOLSEN: No, an assessment. Just  
19 an independent assessment. There was a team put  
20 together. So there's a precedent for putting together  
21 an assessment.

22 MR. BLANCH: I think it was called the CVA,  
23 and it's some vertical assessment that was done at  
24 Vermont Yankee. And there was also one done at Indian  
25 Point at the request of Senator Clinton and other

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1 Congressional reps, again back in the same time frame,  
2 2008-2010. So this request for an independent  
3 assessment is not without precedence.

4 MS. VAN DOLSEN: And have any been done  
5 near a gas pipeline? So, that's another question. I  
6 see this one, but I don't know if there has been an  
7 assessment independently done to do a risk assessment  
8 near a natural gas pipeline.

9 MR. BLANCH: The only one I could think is  
10 the one that was conducted by AREVA in Eunice, New Mexico  
11 maybe five, six years ago for a 16-inch line operating  
12 at 50 pounds. I have a copy of that assessment that was  
13 done.

14 MS. VAN DOLSEN: And how many nuclear  
15 plants operate near a gas pipeline in the proximity of  
16 the one that we're talking about in this case?

17 MR. BLANCH: Well, the closest one, even  
18 closer than Indian Point, is Turkey Point, which has  
19 never been analyzed.

20 CHAIRMAN MILLER: So I'm going to try to  
21 turn our direction back towards what we're trying to do  
22 in this call -- is to try to get any additional  
23 information for the Panel to consider in their  
24 deliberations. So I would ask is there any other  
25 questions that we want to ask of those who presented that

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1 the Panel should consider for this issue?

2 MS. LEVENBERG: I'm sorry. This is Dana  
3 again from Assemblywoman Sandy Galef's office, and I  
4 just wanted to point out that we had received a response  
5 from the NRC related to the technical basis behind the  
6 assumptions that valves will close an isolated gas leak  
7 within three minutes, and that came directly from  
8 Resource Report 11, Reliability and Safety, filed with  
9 FERC by Algonquin in February of 2014 related to the AIM  
10 project. And it was Section 11.4.3.2. And it was  
11 specifically again from Algonquin. That was where it  
12 came from. And it was specifically about the pressure  
13 drops that would be noted from the remote -- the gas  
14 control center in Houston, Texas. And again, that was  
15 provided to me by the NRR office, by Doug Tifft at the  
16 NRC.

17 So again, I think that we continue to have  
18 concern based on Mr. Kuprewicz' review of this  
19 three-minute assumption that is so critical because it  
20 came from Algonquin, or Spectra, I guess.

21 MR. BLANCH: And that three-minute  
22 assumption is what they are basing this safety of Indian  
23 Point upon.

24 MS. LEVENBERG: Right.

25 MR. KUPREWICZ: Yes, this Rick Kuprewicz.

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1 And it kind of gets down to -- if I recall -- again, I  
2 look at a lot of gas pipelines, but even if you close  
3 the valve in three minutes, which you will not, because  
4 a transient study for rupture in this particular  
5 location will clearly indicate that that's not the case  
6 -- even if you were to close those valves, it is still  
7 going to burn for many minutes at high heat flux, because  
8 that's what the laws of science, the laws of  
9 thermodynamics will dictate. If I recall, the valve  
10 spacings are 15 miles. If you have 15 miles of  
11 high-pressure gas pipeline, it's not going to go to zero  
12 pressure. It's going to burn for a long time at high  
13 heat flux.

14 So, if I were to comment on this, what the  
15 NRC has to think about is what is the actual -- the  
16 transient dynamics of a pipeline rupture in this  
17 location approximately three miles away from a  
18 compressor station and how long will this burn at heat  
19 fluxes that can affect equipment? End of subject.

20 It isn't I can close the valves in three  
21 minutes. It might be 20 minutes before you recognize  
22 that. So, that's the fundamental issue that you folks  
23 have to see if someone has done that.

24 MR. PICKETT: This is Doug Pickett again.  
25 When you first started your presentation I thought I

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1 heard you say something like the fellow who's going to  
2 be in Houston monitoring the pressure would not see a  
3 pressure drop if a pipe ruptured, and I was a little  
4 confused on that. Can you go into that again? What  
5 would he see?

6 MR. KUPREWICZ: Yes, most likely he's in  
7 the control room getting all kinds of alarms. If you've  
8 ever -- well, you guys have NRC control rooms, but  
9 pipelines get a lot more alarms. And so he's got to  
10 figure out how he's monitoring this and checking on  
11 this, and he may get an alarm. He may say, hey,  
12 something has changed, but I don't know what it is. But  
13 for a rupture release in which you've blown these pipes,  
14 the 42-inch pipe is going to shrapnel and come out of  
15 the line, out of the ground. Big crater. Huge gas  
16 velocities.

17 But the laws of thermodynamics dictate the  
18 rate at which the gas can be released out the full-bore  
19 ruptures from both ends. Okay? And that's limited to  
20 the speed of sound of the gas, the speed of the sound  
21 of the gas within the gas. Not in air. So it's  
22 roaring. But it limits the mass rate. It limits how  
23 much it releases.

24 So bottom line is in layman's terms the  
25 pressures don't drop as fast as you'd think. It's not

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1 a balloon burst.

2 MR. PICKETT: Okay.

3 MR. KUPREWICZ: And if you close the valves  
4 and they're 15 miles apart, there are plenty of  
5 documents in the public domain that will show you it  
6 takes many, many minutes before the flames really start  
7 to decline. And so the real issue here is if you get  
8 a gas pipeline rupture, how long will this burn at heat  
9 fluxes that can affect equipment that is important? If  
10 the answer is there's no equipment there, then that's  
11 fine. Move on. But from what I'm seeing, that's not  
12 necessarily the case.

13 MR. BLANCH: And adding to that, NRC  
14 regulations dictates that we have to assume a single  
15 failure at the valve --

16 (Simultaneous speaking)

17 MR. KUPREWICZ: Yes, let me also point out  
18 to the NRC, don't feel like anybody's criticizing you  
19 folks because you don't understand this stuff. There  
20 are gas pipeline operators that we have to sit in a room  
21 and great detail and explain this. And they're closer  
22 to this and they don't get it until someone shows it to  
23 them. So don't think like I'm saying, oh, you missed  
24 this and it's your fault. That's not what I'm doing  
25 here. Please.

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1 CHAIRMAN MILLER: Thank you. I wanted to  
2 ask is there anyone from the Licensee that would like  
3 to ask any questions of the presenters?

4 MR. WALPOLE: No, thank you, Chris.

5 CHAIRMAN MILLER: Okay. Any other  
6 questions, concerns? Did I go to the regions?  
7 Anything from the region?

8 (No audible response)

9 CHAIRMAN MILLER: Okay. Good. Well, I  
10 --

11 MR. BLANCH: And how long can we expect to  
12 have to wait for a transcript of this session?

13 MR. PICKETT: Doug Pickett here again.  
14 We've requested the transcript to be within a week, so  
15 then we have to review the transcript and make sure it's  
16 accurate. And hopefully within a few weeks you'll be  
17 able to see the transcript.

18 MR. BLANCH: Okay.

19 CHAIRMAN MILLER: Okay. Do you another  
20 question, Mr. Blanch?

21 MR. BLANCH: No, that's all I have.

22 CHAIRMAN MILLER: Okay. Well, I wanted to  
23 thank you and Mr. Kuprewicz. Good informative session.  
24 I got a lot of information covered. So thanks for  
25 taking your time. We'll continue with our process.

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1                   Before we close, does the court reporter  
2                   need anything additional before we close the meeting,  
3                   close the transcript?

4                   COURT REPORTER:   Yes.   Mr. Kuprewicz,  
5                   could you spell your last name for me?

6                   MR. KUPREWICZ:   Gee, I've never been asked  
7                   that before.

8                   MR. BLANCH:   Yes.   Right.

9                   MR. KUPREWICZ:   It's K-U-P-R-E-W-I, C as  
10                  in cat, Z as in zebra.

11                  COURT REPORTER:   Got it.   That's all.

12                  (Whereupon, the above-entitled matter went  
13                  off the record at 3:34 p.m.)

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----- Forwarded message -----

From: **Paul Blanch** <[pdblanch@comcast.net](mailto:pdblanch@comcast.net)>

Date: Thu, Feb 19, 2015 at 3:13 PM

Subject: Re: Transcript of PRB Meeting

To: "Pickett, Douglas" <[Douglas.Pickett@nrc.gov](mailto:Douglas.Pickett@nrc.gov)>

Cc: Paul Blanch <[pdblanch@comcast.net](mailto:pdblanch@comcast.net)>, "Miller, Chris"

<[Chris.Miller@nrc.gov](mailto:Chris.Miller@nrc.gov)>, "Banic, Merrilee" <[Merrilee.Banic@nrc.gov](mailto:Merrilee.Banic@nrc.gov)>, "Tifft,

Doug" <[Doug.Tifft@nrc.gov](mailto:Doug.Tifft@nrc.gov)>, Dana Levenberg

<[levenbergd@assembly.state.ny.us](mailto:levenbergd@assembly.state.ny.us)>, Susan Van Dolsen

<[svandolsen@gmail.com](mailto:svandolsen@gmail.com)>, Bernard Vaughey <[vaughey@aol.com](mailto:vaughey@aol.com)>, RICHARD

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Ellen Weininger <[ewgrassroots@aol.com](mailto:ewgrassroots@aol.com)>, Rossana Raspa

<[rossana.raspa@nrc.gov](mailto:rossana.raspa@nrc.gov)>, "William. R. Corcoran"

<[william.r.corcoran@1959.usna.com](mailto:william.r.corcoran@1959.usna.com)>

Doug:

Thanks for a direct answer to my question. I have carefully reviewed all of this information from the NRC and Entergy prior to submitting my 2.206 petition.

I have also reviewed [Department of Transportation \(DOT\) Pipeline Hazardous Material Safety Administration \(PHMSA\) website](#) and [Resource Report 11, "Reliability and Safety,"](#) and 49 CFR 190-199. None of these NRC cited references the 3 minute isolation times. I would like to see industry/NRC research or actual calculations, history or testing supporting this assumed isolation time.

There is no indication or documentation supporting this imagined 3 minute closure time. Exactly where did this number originate other than from Entergy's 50.59 submittal? There are numerous reports from ASME, NTSB publicly available <http://www.nts.gov/investigations/AccidentReports/Pages/pipeline.aspx> that discuss closure time and termination of flammable gas flow from a pipe rupture. The two most prominent are the San Bruno fire and the Edison, NJ gas line rupture in 1994 but many more can be above cited NTSB website.

I think the NRC needs to do some research on actual events rather than blindly accepting a questionable 3 minute number which has no apparent basis. Should the NRC care to review these ASME, NTSB and other documents refuting this 3 minute assumption, I and Richard Kuprewicz would be more than willing to provide them to the NRC or the NRC can search the web for the same information I have obtained.

The NRC apparently not required or plans any actual performance testing or

verification. The NRC itself requires the analysis to consider an operator response time of 10 or 20 minutes. See enclosed NRC documentation.

In addition, one has to consider the actual closure time of at least (2) 42 inch valves, the blowdown time of 850 PSI--42 inch diameter pipe and five miles between valves. One must also consider the gas lines which run parallel to these lines and must also be isolated.

I have worked with the NRC/AEC for more than 40 years and do not recall it ever accepting an analysis number without verification, analysis and actual testing. 10 CFR 50 Appendix B clearly requires testing. Below are just two of the examples from 10 CFR 50 that requires testing of SSCs as defined in 10 CFR 50.2.

### *III. Design Control*

*Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in § 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the structures, systems and components.*

*Measures shall be established for the identification and control of design interfaces and for coordination among participating design organizations. These measures shall include the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces.*

*The design control measures shall provide for **verifying** or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculational methods, or by the performance of a **suitable testing program**. The **verifying or checking** process shall be performed by individuals or groups other than those who performed the original design, but who may be from the same organization. Where a **test program** is used to **verify** the adequacy of a specific design feature in lieu of other verifying or checking processes, it shall include suitable qualifications testing of a prototype unit under the most adverse design conditions. Design control measures shall be applied to items such as the following: reactor physics, stress, thermal, hydraulic, and accident analyses; compatibility of materials; accessibility for inservice inspection, maintenance, and repair; and delineation of **acceptance criteria for inspections and tests**.*

*Design changes, including field changes, shall be subject to design control measures commensurate with those applied to the original design and be*

*approved by the organization that performed the original design unless the applicant designates another responsible organization.*

#### *XI. Test Control*

*A test program shall be established to assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The test program shall include, as appropriate, proof tests prior to installation, preoperational tests, and operational tests during nuclear power plant or fuel reprocessing plant operation, of structures, systems, and components. Test procedures shall include provisions for assuring that all prerequisites for the given test have been met, that adequate test instrumentation is available and used, and that the test is performed under suitable environmental conditions. Test results shall be documented and evaluated to assure that test requirements have been satisfied.*

Once again, where did the 3 minute time originate?

Please consider this additional information as part of my 2.206 petition.

Paul Blanch  
[860-236-0326](tel:860-236-0326)  
[860-922-3119](tel:860-922-3119) cell  
[pmb Blanch@comcast.net](mailto:pmb Blanch@comcast.net)

On Feb 19, 2015, at 12:03 PM, Pickett, Douglas <[Douglas.Pickett@nrc.gov](mailto:Douglas.Pickett@nrc.gov)> wrote:

Mr. Blanch –

In direct response to your question, Mr. Miller was simply acknowledging your request as an action item for the Petition Review Board. More to the point, the following provides an explanation describing why the NRC finds Entergy's assumption of a 3 minute valve closure time acceptable .

The following is taken from Entergy's 50.59 site hazards analysis (ML14253A339, Enclosure 1, page 7 of 21) and describes how the remote operator would be expected to respond within the first minute and the valves would close in the second minute.

### Actions in the event of a rupture

The existing pipeline automation and control system, which will be used for the proposed new 42 inch pipeline near IPEC, does not provide for an automatic isolation of the closest upstream and downstream mainline valves upon the detection of a pipeline rupture. The two closest actuated valves are located at mile post 2.61 on the west side of the Hudson River and at mile post 5.47 just east of IPEC. They would require an operator to take action to close these valves. The system, however, is monitored 24 hours a day and an alarm would immediately alert the control point operator, located in Houston, Texas, of an event and isolation would be initiated. This would result in all the gas between these valves at the time of closure being able to vent or burn. The estimated time to respond to the alarm (less than one minute) and the closure time of the valves (about one minute) was used as the basis for an assumed closure time of three minutes for the analysis performed in the attached report.

The next closest isolation valve locations are at the Stony Point Compressor Station mile post 0.0 and at MLV 15 at mile post 10.52. Valve operation follows the requirements of the DOT Code and is tested on a periodic basis to ensure compliance with code requirements.

The following describes why the NRC finds this acceptable.

### **What is the technical basis behind the assumption that valves will close to isolate a gas leak within 3 minutes?**

Section 11.4.3.2, Equipment, from [Resource Report 11, "Reliability and Safety,"](#) filed with FERC by Algonquin in February 2014 related to the AIM Project states as follows:

"A gas control center is maintained in Houston, Texas. The gas control center monitors system pressures, flows, and customer deliveries. Further, the gas control center is manned 24 hours a day, 365 days a year. Algonquin also operates area and sub-area offices along the pipeline route whose personnel can provide the appropriate response to emergency situations and direct safety operations as necessary.

Algonquin's proposed AIM Project pipeline will be equipped with remote control shutoff valves as required by the USDOT regulations. This allows the shutoff valves to be operated remotely by the gas control center in the event of an emergency, usually evidenced by a sudden loss of pressure on the pipeline. Remotely closing the shutoff valve allows the section of pipeline to be isolated from the rest of the pipeline system.



Data acquisition systems are present at all meter stations along the system. If system pressures fall outside a predetermined range, an alarm is activated and notice is transmitted to the Houston gas control center. The alarm provides notice that pressures at the station are not within an acceptable range."

In addition, NRC personnel reviewed information from the [Department of Transportation \(DOT\) Pipeline Hazardous Material Safety Administration \(PHMSA\) website](#) and noted that natural gas transmission line regulations are found in 49 CFR 190-199. These regulations require written procedures for conducting operations and maintenance activities and for emergency response, controller training, valve and pipeline maintenance, fatigue management, and other aspects related to design, construction, and operation of gas transmission and distribution pipelines.

Based on the above information, we noted that there were controls in place to readily identify and isolate a gas leak and determined that the assumptions specified in Entergy's analysis appeared to be reasonable.

Doug

Douglas V. Pickett, Senior Project Manager  
Indian Point Nuclear Generating Unit Nos. 2 & 3  
James A FitzPatrick Nuclear Power Plant  
[Douglas.Pickett@nrc.gov](mailto:Douglas.Pickett@nrc.gov)  
[301-415-1364](tel:301-415-1364)

**From:** Paul Blanch [<mailto:pdblanch@comcast.net>] **Sent:** Wednesday, February 18, 2015 10:52 AM  
**To:** Miller, Chris  
**Cc:** Paul Blanch; Pickett, Douglas  
**Subject:** Re: Transcript of PRB Meeting

The following is from the transcript. What did you mean in response to my inquiry "I've got that note." What is the origin of the 3 minute isolation time?

<image001.png>  
Paul Blanch [860-236-0326](tel:860-236-0326)  
Paul Blanch  
[860-236-0326](tel:860-236-0326)  
[860-922-3119](tel:860-922-3119) cell  
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Health

SANDRA R. GALEF  
Assemblywoman 95<sup>th</sup> District

February 26, 2015

Honorable Cheryl A. LeFleur  
Chairman  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

20150402-5890: FERC.DNE (Unofficial) 4/2/2015 4:22:58 PM

Honorable Stephen G. Burns  
Chairman  
U.S. Nuclear Regulatory Commission  
Mail Stop O-16G4  
Washington, DC 20555-0001

Re: Project Docket Number **CP14-96-000**

Dear Chairmen LeFleur & Burns,

After spending time communicating with the NRC about the conclusion of the safety hazard analysis they conducted regarding the siting of the AIM pipeline in close proximity to the Indian Point Energy Center, I have been most disappointed. The fact that we have a major nuclear power plant with already contentious debate about its safety within 50 miles of New York City, that is now having its safety potentially compromised further with this high volume high pressure 42" pipeline is disturbing at best.

I do not understand why the approval process is being expedited. I have received information that the basis for a very important assumption in the safety hazard analysis has not been properly validated. Why is this issue not being addressed by NRC or FERC? I have brought this concern to the attention of the NRC with support from nuclear and gas line experts, and yet, no action has been taken, as far as I am aware, to go back and reexamine that 3 minutes is a valid and conclusive amount of time in which gas flow to the area could be stopped.

This is the main focus of my concern. I would like to know what evidence exists that for gas line ruptures that have occurred elsewhere, in fact gas flow has been shut down in 3 minutes. In the disasters that have been publicized, this has not been the case. The gas expert I have been speaking with has made it clear that Houston, Texas would not necessarily recognize a pressure drop in Buchanan, New York quickly enough, nor based on the distance of the valves, would the system be able to work fast enough to make a shutdown happen that quickly.

Again, with such critical infrastructure at this juncture in this small town, just a stone's throw from the biggest city in the U.S., I am having a difficult time understanding why this concern does not merit further questioning before pushing through the siting of this pipeline within 500 feet of Indian Point's fuel oil. I am attaching a recent press release I sent out highlighting my concerns, as well as a petition that was filed with the NRC by nuclear expert Paul Blanch. While I specifically name NRC for not having validated the 3 minute estimate, I believe FERC is just as responsible for expediting the siting process without assuring the public that proper analysis has taken place.

I look forward to your response.

Sincerely,

Sandra R. Galef  
New York State Assembly  
95<sup>th</sup> District  
Representing the following municipalities in a 15 mile  
radius of Indian Point: Cortlandt, Buchanan, Croton,

Peekskill, Nelsonville, Cold Spring, Ossining, Briarcliff,  
Philipstown

Att.

Cc: U.S. Senator Charles Schumer  
U.S. Senator Kirsten Gillibrand  
Congresswoman Nita Lowey  
Commissioner Joseph Maartens, NYS DEC  
NYS Attorney General Eric Schneiderman  
Legislator Catherine Borgia, Westchester County  
Legislator John Testa, Westchester County  
Supervisor Linda Puglisi, Town of Cortlandt  
Mayor Theresa Knickerbocker, Village of Buchanan

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**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

March 13, 2015

Sandra R. Galef  
Assemblywoman 95<sup>th</sup> District  
The Assembly State of New York, Room 641  
Legislative Office Building  
Albany, NY 12248

Dear Ms. Galef:

I am responding to your letters of January 15 and February 26, 2015, to the Chairman of the Nuclear Regulatory Commission (NRC) regarding the proposed Algonquin Incremental Market (AIM) Project where a 42-inch diameter natural gas pipeline is proposed to cross a portion of the owner controlled property at the Indian Point Energy Center in Buchanan, NY. Members of your staff have discussed the AIM project with staff from the NRC Region I Office located in King of Prussia, PA, with support from NRC headquarters staff located in Rockville, MD.

NRC regulations required that Entergy Nuclear Operations, Inc., the licensee for Indian Point, perform a site hazards analysis to determine the impact that the proposed natural gas pipeline would have on the facility. Accordingly, Entergy performed an analysis of the proposed 42-inch diameter gas pipeline and concluded that the plant could safely shut down in the event of a pipeline rupture and that the proposed gas pipeline would not represent an undue risk to the safe operation of the facility. The NRC staff reviewed Entergy's analysis and concluded that it was reasonable. In addition, the NRC staff performed an independent confirmatory analysis by conservatively assuming a complete rupture of the 42-inch diameter gas pipeline and similarly concluded that the plant could operate safely or could shut down and that the proposed pipeline would not represent an undue risk to the plant.

Your letter of January 15, 2015, stated that the NRC analysis was based on unrealistic assumptions and severely overestimated the ability of remote operators to isolate the gas pipelines and stop the flow of gas. Your letter also included a letter from Mr. Richard Kuprewicz, President of Accufacts, Inc., in which he states that the Entergy site hazard analysis is severely deficient and inadequate. Finally, you requested that an independent risk analysis be performed before the Federal Energy Regulatory Commission approves a certificate to build the proposed AIM Project.

During previous discussions with your staff, you were informed that the NRC had received a petition from Mr. Paul Blanch in which he also called for an independent analysis of the safety impact of the proposed AIM Project and that Mr. Blanch would have the opportunity to discuss his concerns with the NRC's Petition Review Board.

On January 28, 2015, Mr. Blanch, with assistance from Mr. Kuprewicz, made their presentation before NRC's Petition Review Board where they discussed their concerns over the proposed AIM Project. Their presentation focused on the following three items. First, they stated that it was unreasonable to assume that remote operators located in Houston, TX, would be able to detect pressure losses resulting from a postulated pipe rupture and take actions resulting in isolating gas flow within 3 minutes. Based on his experience, Mr. Kuprewicz estimated that the remote isolation valves would not close prior to 30 to 60 minutes following a pipe rupture.

- 2 -

Second, they believed that the controlling factor following a postulated pipe rupture would be the critical heat flux resulting from an extended fire that would last much longer than 3 minutes and would result in melting essential safety system components at the Indian Point site. They acknowledged that the robust concrete structures at the Indian Point site would not likely be adversely impacted by the overpressure pulse associated with the initial explosions. Third, they insisted that an independent safety analysis be performed to more accurately determine the impact of the proposed AIM project on the Indian Point site.

Your letter of February 26, 2015, further questioned Entergy's assumption that the pipeline isolation valves would close within 3 minutes following a pipeline rupture. Specifically, you questioned how remote control room operators located in Houston, TX, would be able to recognize that a pipeline rupture occurred and take the necessary actions to close the valves and isolate flow within 3 minutes. The NRC staff shared these concerns and performed a sensitivity study to determine the impact of a delayed closure of the pipeline's isolation valves. The study was bounded by the assumption of an infinite source which, simply stated, is the case where the isolation valves do not close and remain open for 60 minutes. The staff used the Areal Locations of Hazardous Atmospheres (ALOHA) model to simulate a 60-minute, continuous release. The ALOHA model was developed by NOAA and the EPA for responding to chemical releases, as well as emergency planning purposes. The outcome of the infinite source on the staff's confirmatory analysis resulted in only a minimal increase in both the overpressure pulse and the heat flux at safety-related structures, systems, and components (SSCs) of the plant. Due to the distance between the proposed routing of the 42-inch diameter natural gas pipeline and safety-related SSCs located at the Indian Point site, the predicted increase in peak pressure and critical heat flux remained below levels that would adversely impact the safe operations at the Indian Point site or prevent a safe shutdown.

The petition submitted by Mr. Blanch is being reviewed by the Petition Review Board. As part of that review process, a determination will be made regarding the need for an independent analysis, in addition to that already performed by the NRC staff. We will apprise you of any decisions by the Board regarding the petition when we communicate them to Mr. Blanch.

Thank you for sharing your concerns on this important issue.

Sincerely,



Michele G. Evans, Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

- 2 -

Second, they believed that the controlling factor following a postulated pipe rupture would be the critical heat flux resulting from an extended fire that would last much longer than 3 minutes and would result in melting essential safety system components at the Indian Point site. They acknowledged that the robust concrete structures at the Indian Point site would not likely be adversely impacted by the overpressure pulse associated with the initial explosions. Third, they insisted that an independent safety analysis be performed to more accurately determine the impact of the proposed AIM project on the Indian Point site.

Your letter of February 26, 2015, further questioned Entergy's assumption that the pipeline isolation valves would close within 3 minutes following a pipeline rupture. Specifically, you questioned how remote control room operators located in Houston, TX, would be able to recognize that a pipeline rupture occurred and take the necessary actions to close the valves and isolate flow within 3 minutes. The NRC staff shared these concerns and performed a sensitivity study to determine the impact of a delayed closure of the pipeline's isolation valves. The study was bounded by the assumption of an infinite source which, simply stated, is the case where the isolation valves do not close and remain open for 60 minutes. The staff used the Areal Locations of Hazardous Atmospheres (ALOHA) model to simulate a 60-minute, continuous release. The ALOHA model was developed by NOAA and the EPA for responding to chemical releases, as well as emergency planning purposes. The outcome of the infinite source on the staff's confirmatory analysis resulted in only a minimal increase in both the overpressure pulse and the heat flux at safety-related structures, systems, and components (SSCs) of the plant. Due to the distance between the proposed routing of the 42-inch diameter natural gas pipeline and safety-related SSCs located at the Indian Point site, the predicted increase in peak pressure and critical heat flux remained below levels that would adversely impact the safe operations at the Indian Point site or prevent a safe shutdown.

The petition submitted by Mr. Blanch is being reviewed by the Petition Review Board. As part of that review process, a determination will be made regarding the need for an independent analysis, in addition to that already performed by the NRC staff. We will apprise you of any decisions by the Board regarding the petition when we communicate them to Mr. Blanch.

Thank you for sharing your concerns on this important issue.

Sincerely,

/RA/

Michele G. Evans, Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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**\*concurring via email**

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**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

March 20, 2014

The Honorable Sandra R. Galef  
New York State Assembly  
Legislative Office Building, Room 641  
Albany, NY 12248

Dear Ms. Galef:

I am responding to your letter of January 23, 2014, to Chairman Allison M. Macfarlane of the U.S. Nuclear Regulatory Commission (NRC), regarding your concerns over proposed increases in energy delivery and transmission systems near Buchanan. The proposed Algonquin Incremental Market (AIM) Project and the West Point Partners Transmission (WPPT) Project will pass in the vicinity of the Indian Point Energy Center (IPEC). Your letter contained questions directed to a number of Federal and State agencies that have various jurisdictions over electrical transmission, natural gas pipelines, and nuclear power plant operation. Below, we address those questions that we believe are pertinent to the NRC.

Specifically, you asked, (1) "Does the NRC have an opportunity to weigh in on the impact to IPEC's safety that siting increased capacity gas pipes and electric transmission lines would have, both in constructing of the lines/facilities as well as their ongoing operations?" and (2) "Is there any communication between licensing and siting agencies to ensure that the overlap or convergence of these three energy production and delivery infrastructures makes sense, are safe, and are vetted?"

The *Code of Federal Regulations* requires that nuclear power plant structures, systems, and components important to safety be appropriately protected against dynamic effects resulting from events and conditions that may occur outside the nuclear power plant. These events include the effects of explosion of hazardous materials that may be associated with nearby industrial activities such as storage facilities or transportation routes such as navigable waterways and pipelines. The NRC was informed by Entergy Nuclear Operations that they've been actively engaging Spectra Energy in order to obtain a better understanding of the AIM project and to ensure that appropriate reviews and analyses are conducted to determine whether the proposed project could introduce increased hazards near or on the IPEC site. The NRC will continue to monitor these activities.

For your information, there are three gas pipelines, with only two typically in-service simultaneously, that traverse the IPEC owner controlled area. The NRC has independently evaluated the external hazards posed by these pipelines on safety-related structures a number of times over the years, including pre-licensing in 1973 and more recently in 2003 and 2008. Our evaluations have considered the design and construction of the gas lines, operation and maintenance practices, postulated failure modes, and standoff distances to safety-related structures. The NRC staff believes that a jet fire would be the most likely consequence of a major pipe rupture and the resulting fire would be limited to immediate flammable materials, such as trees, and would not impact safety-related structures. The modeling of a vapor cloud explosion, which the staff believes is highly improbable, would create an overpressure wave that would dissipate to below 1 psig before reaching safety-related reinforced concrete structures,

S. Galef

- 2 -

such as the Unit 3 diesel generator building, and would not pose a threat. Therefore, our reviews have concluded that the pipelines do not adversely affect the safety and security of the plant.

In response to your second question regarding coordination between the various responsible agencies, a memorandum of agreement (MOA) between the NRC and the Federal Energy Regulatory Commission (FERC) was executed in 2009. In accordance with the MOA, the two agencies may consult with each other with regard to the availability of technical information that would be useful in areas of mutual interest, and we promote and encourage a free flow of such information. The NRC has contacted FERC to inform them of our involvement as a regulatory agency for the Indian Point Nuclear Generating Units. Our agencies will certainly engage each other should there be questions or concerns as we mutually conduct our independent reviews of this matter.

Thank you for sharing your concerns regarding the potential effects of these proposed projects on the Indian Point site. If you have any further questions, please contact the NRC's Project Manager for IPEC, Mr. Douglas Pickett at (301) 415-1364.

Sincerely,

A handwritten signature in black ink that reads "Michele G. Evans". The signature is written in a cursive, flowing style.

Michele G. Evans, Director  
Division of Operating Reactors Licensing  
Office of Nuclear Reactor Regulation



S. Galef

- 2 -

such as the Unit 3 diesel generator building, and would not pose a threat. Therefore, our reviews have concluded that the pipelines do not adversely affect the safety and security of the plant.

In response to your second question regarding coordination between the various responsible agencies, a memorandum of agreement (MOA) between the NRC and the Federal Energy Regulatory Commission (FERC) was executed in 2009. In accordance with the MOA, the two agencies may consult with each other with regard to the availability of technical information that would be useful in areas of mutual interest, and we promote and encourage a free flow of such information. The NRC has contacted FERC to inform them of our involvement as a regulatory agency for the Indian Point Nuclear Generating Units. Our agencies will certainly engage each other should there be questions or concerns as we mutually conduct our independent reviews of this matter.

Thank you for sharing your concerns regarding the potential effects of these proposed projects on the Indian Point site. If you have any further questions, please contact the NRC's Project Manager for IPEC, Mr. Douglas Pickett at (301) 415-1364.

Sincerely,

/ra/

Michele G. Evans, Director  
Division of Operating Reactors Licensing  
Office of Nuclear Reactor Regulation

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**ADAMS ACCESSION NO.: ML14069A370**

OFFICE	LPL1-1/PM	LPL1-1/LA	LPL1-1/BC	NRR/DORL/D
NAME	DPickett	KGoldstein	BBeasley	MEvans
DATE	03 /14/ 2014	03 / 11 / 2014	03 / 14 / 2014	03 /20/ 2014

**OFFICIAL RECORD COPY**

## Conference call request



From **DHS.IGA** [DHS.IGA@HQ.DHS.GOV](mailto:DHS.IGA@HQ.DHS.GOV) [hide details](#)

Fri, Mar 20, 2015 2:42 pm

To **amyrosmarin** [amyrosmarin@aol.com](mailto:amyrosmarin@aol.com)

Dear Councilwoman Rosmarin,

We received your request for a conference call with Secretary Johnson and Assistant Secretary Durkovich to discuss the Indian Point Nuclear Facility and the proposed gas pipeline. The U.S. Nuclear Regulatory Commission (NRC) is responsible for ensuring the safety and security of commercial nuclear power plants. As such, we recommend you follow up with the NRC to address your concerns.

Regards,

Brian Hyer

**Office of Intergovernmental Affairs**  
U.S. Department of Homeland Security  
Phone: 202-282-9310

J.A. - 1572

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

Date	Statement of Fact	Comments	Reference
January 16, 2004	LES gas line analysis in Eunice NM of a 16 inch 50 PSI line located more than a mile from a proposed nuclear facility found to be unacceptable due to the potential of a rupture of this 16 inch line.	Nuclear facility located one mile from 16 inch gas line and found to be unacceptable. The analyzed line was 16 inches diameter operating at 50 PSI. The closest critical structure was 1800 feet from the pipeline. The probability of an explosion impacting the facility was calculated at about 1e-5 per year.	<a href="#">LES analysis</a>
June 30, 2009	License application for new Turkey Point 6 & 7 plants within the vicinity of a 24 inch 772 PSI pipeline located about 4000 feet from the gas line.	In its application, Turkey Point clearly states that the damaging blast radius is 3097 feet. The damaging blast radius from this 24 inch 772 PSI line is calculated to be 3097 feet however the proposed plant is to be located more than 4000 feet to the closest gas line.	<a href="#">Turkey Point COLA Application</a>
January 23, 2014	Assemblywoman Sandy Galef writes to Chairman Macfarlane of the NRC re: AIM, WPP and IP	Letter states that NRC and FERC signed a MOA in 2009 and that "they may consult with each other with regard to the availability of technical information that would be useful in areas of mutual interest, and we promote and encourage a free flow of such information."	
March 20, 2014	Letter from NRC in response to Galef letter of 1/23/14 from Michele Evans, Director, Division of Operating Reactors Licensing, Office of Nuclear Reactor Regulation		

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

May 19, 2014	Paul Blanch requests the NRC perform an analysis assuring the safety of the addition of a new 42 inch gas line in the vicinity of Indian Point	PMB believed change can't be made without license amending. NRC agrees that 10 CFR 50.59 analysis will be required	<a href="https://www.dropbox.com/s/0oyjrmhugm5exlp/Response%20Letter%20IP%20gas%20line.pdf?dl=0">https://www.dropbox.com/s/0oyjrmhugm5exlp/Response%20Letter%20IP%20gas%20line.pdf?dl=0</a>
June 27, 2014	Paul Blanch writes letter to Westchester County Board of Legislators following his presentation to the Energy & Environment Committee the prior week		
August 21, 2014	Entergy and the NRC state the new gas line can be isolated within 3 minutes. Review of all pipeline ruptures by the NTSB from 1990 to present, show the time to terminate gas flow is in the range from 30 minutes to 150 minutes.	NRC requires a minimum of 10 to 20 minutes for nuclear plant operators to perform manual actions. These valves are required to mitigate the consequences of a nuclear accident as defined by 10 CF 50.2, therefore must meet the requirements for nuclear plants. This includes the single failure considerations defined in 10 CFR 50, Appendix A, Appendix K, IEEE 279, and subjected to the design and testing requirements of 10 CFR 50.49, 10 CFR 50.65 and also 10 CFR 50.49	<a href="#">Entergy 50.59 Analysis</a>
August 21, 2014	Entergy submits its analysis and a summary if its 10 CFR 50.59 analysis to the NRC and makes the summary public.		<a href="#">Entergy's 50.59 Analysis</a>
August 21, 2014	Entergy calculates the maximum damage radius to be 1195 feet based on a three minute release.	Regulatory Guide 1.91	<a href="#">Entergy 50.59 Analysis</a>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

August 21, 2014	Entergy states that the gas flow will be terminated within 3 minutes should a rupture occur. NRC concurs that all natural gas releases will be "instantaneous."	<p>It is unlikely or not possible to terminate the "event" within 3 minutes. It is not supported by any submitted documentation or verification to support frequency of application for "RUPTURE" to closure. Even in the unlikely event the valves are closed within 3 minutes, the blowdown time of the high pressure gas will continue for a prolonged period of time.</p> <p>Entergy concludes the event will be terminated within three minutes by stating "the event to be terminated by manual action within 3 minutes after any pipeline rupture."</p> <p>The NRC states that closure of the valves will occur within 3 minutes of alarm, not rupture.</p>	<a href="#">Entergy 50.59 Analysis</a>
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Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

August 21, 2014	Entergy's 50.59 analysis states that the damage radius would be 1266 feet for a jet fire and 115 feet for a vapor cloud explosion. The switchyard is located 115 feet from the new gas line and the fuel oil supply is located 105 feet from the gas line. Both of these SSC ITS would be compromised, rendered useless or possibly destroyed resulting in a loss of offsite power. Both Entergy and the NRC assume the gas flow would be terminated within 3 minutes There is no documentation to support this isolation time and NTSB investigations of major gas line accidents show typical isolation times from 1 to 3 hours. The NRC's cited reference "Handbook of Chemical Hazard Analysis Procedures" is apparently dated circa 1987 and does not consider subsequent major gas-line explosions such as the San Bruno, CA, Sissonville WV, Cleburne TX, Carlsbad NM, and the Edison, NJ transmission and distribution explosions.		<a href="#">Entergy 50.59 Analysis</a>
October 6, 2014	Congresswoman Lowey letter to FERC requesting health and safety assessment, mentions IP and AIM	Urges FERC to withdraw current DEIS, evaluate and review potential health and safety impacts and issue Supplemental DEIS	<a href="https://www.dropbox.com/s/6a21wzd6snuej8y/Letter%20to%20FERC%2010.6.14.pdf?dl=0">https://www.dropbox.com/s/6a21wzd6snuej8y/Letter%20to%20FERC%2010.6.14.pdf?dl=0</a>
October 15, 2014	Paul Blanch files a 10 CFR 2.206 petition with the NRC questioning the safety of the new 42 inch gas line		<a href="#">PMB 2.206 petition</a>
November 3, 2014	Accufacts submits report to FERC docket CP14-96 via Town of Cortlandt attorney Tom Wood		<a href="https://sape2016.files.wordpress.com">https://sape2016.files.wordpress.com</a>
November 6, 2014	Letter from FERC Chairman to Congresswoman Lowey	FERC Chairman responds to Congresswoman that they will consider Safety Evaluation conducted by Entergy. No mention of NRC Evaluation	<a href="https://www.dropbox.com/s/w5e0eqtzbapriik/FERC_Response_to_Nita_Lowey.pdf?dl=0">https://www.dropbox.com/s/w5e0eqtzbapriik/FERC_Response_to_Nita_Lowey.pdf?dl=0</a>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

November 7, 2014	NRC inspection report reaffirms acceptance of Entergy analysis. Mr. Tammara, the principal contributor was not part of the inspection team, and may not have viewed the conditions at the site, which he is claiming is safe per his analysis.		<a href="#">NRC Inspection report approving analysis.</a>
November 7, 2014	Entergy and the NRC use the EPA ALOHA computer program for risk analysis. ALOHA program specifically excludes the use of this program for pipe breaks between isolation valves.	The NRC analyzed two different scenarios one for a pipe end break and one for a mid line break. The ALOHA program is not suitable for either. Page 146 of the EPA ALOHA manual states: "ALOHA cannot model gas release from a pipe that has broken in the middle and is leaking from both broken ends."	<a href="#">NRC Inspection Report</a>
November 7, 2014	The NRC acknowledges that Systems, Structures and Components "SSCs important-to-safety outside the SOCA" may be impacted by a detonation of the gas line.		<a href="#">NRC Inspection report</a>
November 7, 2014	NRC confirms acceptability of Entergy analysis based on the use of the EPA ALOHA program. <b><u>Aloha specifically prohibits the use of this program for this type of event.</u></b>	"ALOHA cannot model gas release from a pipe that has broken in the middle and is leaking from both broken ends." It is clear that the NRC used ALOHA to model two different events. The Entergy analysis summary did not mention or reference ALOHA. This is the first mention of the use of the prohibited ALOHA code	<a href="#">NRC Inspection report</a>
November 17, 2014	Letter from Congresswoman Lowey to NRC Chairman	Requests an independent, comprehensive risk assessment of gas line on Indian Point	<a href="https://www.dropbox.com/s/o5iutcb9ns1fbhg/Letter%20to%20NRC%2011.17.14-5.pdf?dl=0">https://www.dropbox.com/s/o5iutcb9ns1fbhg/Letter%20to%20NRC%2011.17.14-5.pdf?dl=0</a>
November 18, 2014 Paul Blanch writes letter to Governor Cuomo			
November 20, 2014	Paul Blanch files FOIA request FOIA 2015-0062 for NRC's Analysis	FOIA request rejected and appealed	<a href="#">NRC Records of FOIA 2015-0062</a>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

December 2, 2014	Paul Blanch Letter to ACRS Chairman	Request that ACRS review technical Issues with pipeline risks	<a href="https://www.dropbox.com/s/3g0gawe6a9t19v4/20141202%20Letter%20to%20ACRS%20Chairman.pdf?dl=0">https://www.dropbox.com/s/3g0gawe6a9t19v4/20141202%20Letter%20to%20ACRS%20Chairman.pdf?dl=0</a>
December 2, 2014	FOIA Request for copy of NRC's analysis received by Blanch	Withheld all information as "Security Related Information"	
December 2, 2014	Letter to Homeland Security signed by 15 elected officials	Letter requests DHS takes acts proactively to protect the region by halting the project until there is a comprehensive, transparent, independent risk assessment.	
December 30, 2014	Accufacts President letter to FERC Secretary	Point out deficiencies in present analysis and requests independent risk assessment.	<a href="https://www.dropbox.com/s/k48rk8syi445qfy/Accufacts%20Response%20to%20FERC%20on%20IP%20RA.pdf?dl=0">https://www.dropbox.com/s/k48rk8syi445qfy/Accufacts%20Response%20to%20FERC%20on%20IP%20RA.pdf?dl=0</a>
December 30, 2014	Letter from NRC Chairman to Congresswoman Lowey	NRC Staff concludes that Entergy's analysis is valid	<a href="https://www.dropbox.com/s/pd4o7nt0vkg6l2z/NRC%20response%2012.30.14-2.pdf?dl=0">https://www.dropbox.com/s/pd4o7nt0vkg6l2z/NRC%20response%2012.30.14-2.pdf?dl=0</a>
January 5, 2015	Paul Blanch writes letter to Bill Dean and Region 1 Administrator requesting why gas line isolation valves are not considered and treated as safety related as defined in 10 CFR 50.2	Because the gas line rupture is a Design Bases Event and credit is taken for the closure of the isolation valves, the valves must meet the requirements of safety related components as defined in 10 CFR 50.2. No response has been received from the NRC.	<a href="https://www.dropbox.com/s/1iwwr8t7qks61iw/Bill%20Dean%20Safety%20Related%20Gas%20lines%20Rev%201.pdf?dl=0">https://www.dropbox.com/s/1iwwr8t7qks61iw/Bill%20Dean%20Safety%20Related%20Gas%20lines%20Rev%201.pdf?dl=0</a>
January 6, 2015	Letter to FERC Chairman transmitting Accufacts letter	Identifies shortcomings and other technical issues with AIM project	<a href="https://www.dropbox.com/s/69rn315a5qwfunj/Cortlandt%20Accufacts%20reply%20report%20Jan%207%202015%20%2020150107-5022%2830036830%29.pdf?dl=0">https://www.dropbox.com/s/69rn315a5qwfunj/Cortlandt%20Accufacts%20reply%20report%20Jan%207%202015%20%2020150107-5022%2830036830%29.pdf?dl=0</a>
January 12, 2015	Response letter from DHS	States that the NRC is responsible for ensuring the safety and security of commercial nuclear plants and to follow up with the NRC.	



Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

January 15, 2015	Letter from Assemblywoman Galef to NRC Chair and FERC Secretary	Requests independent risk assessment	<a href="https://www.dropbox.com/s/4fm2ro38heidd5h/20150127-0051%2830100672%29-3.pdf?dl=0">https://www.dropbox.com/s/4fm2ro38heidd5h/20150127-0051%2830100672%29-3.pdf?dl=0</a>
January 20, 2015	Paul Blanch files appeal of FOIA response	NRC Chairman directed staff to reconsider initial FOIA rejection. Information conveyed from Chairman to Dave Lochbaum during private meeting,	<a href="#">PMB FOIA Appeal Letter</a>
January 28, 2015	10 CFR 2.206 Petition Review Board Meeting	Transcript discussing problems with Entergy's Analyzes	<a href="#">PRB Transcript</a>
February 13, 2015	Letter from NRC to Assemblywoman Sandy Galef from the NRC	Letter states there is no problem even using a release of 60 minutes. Using similar numbers from Regulatory Guide 1.91, results in more than doubling blast radius. It appears that the NRC used the EPA prohibited ALOHA code to come up with a number that met its predetermined outcome of "no problems."	<a href="#">NRC Inspection report</a>
February 9, 2015	Letter from Senators Schumer and Gillibrand to FERC Chairwoman	Requests final decision be withheld until independent review is conducted	<a href="https://www.dropbox.com/s/wkx9sn9o2o82ckt/AIM%20Letter.pdf?dl=0">https://www.dropbox.com/s/wkx9sn9o2o82ckt/AIM%20Letter.pdf?dl=0</a>
February 19, 2015	The NRC references "Handbook of Chemical Hazard Analysis Procedures" published by FERC, DOT and EPA. This handbook has no references later than 1987 and does not discuss any accidents occurring in the past 25 years.	Email exchange between Paul Blanch and Doug Pickett where Pickett cites handbook and Spectra Resource Report as basis for 3 min.	
February 20, 2015	FERC Chairman Response to Senator Schumer and Gillibrand	Chairman of FERC assures Schumer and Gillibrand that all comments will be considered and reiterated that the NRC has conducted risk analysis and is OK.	<a href="https://www.dropbox.com/s/bs6mosu7t1hxrjh/FERC%20Response%20to%20Schumer%20Letter-2.pdf?dl=0">https://www.dropbox.com/s/bs6mosu7t1hxrjh/FERC%20Response%20to%20Schumer%20Letter-2.pdf?dl=0</a>
February 26, 2015	NRC grants FOIA appeal and provides a copy of NRC's Risk analysis (redacted )	Analysis not signed, dated, or approved	<a href="#">NRC grant appeal to FOIA 2015-0062</a>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

February 26, 2015	Letter from Assemblywoman Galef to NRC Chair and FERC Chair	Questions the origin of the 3 minute closure and isolation time.	
March 5, 2015 NRC grants FOIA appeal			
March 3, 2015	FERC approves AIM project and states: "The NRC concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the Indian Point facility."	On August 21, 2014, Entergy filed its Safety Evaluation for the AIM Project with the Nuclear Regulatory Commission (NRC). The NRC reviewed the site hazards analysis performed by Entergy and performed an independent confirmatory analysis of the blast analysis as well. The NRC's analysis did not account for the additional pipeline design measures identified by Entergy and committed to by Algonquin, and assumed a pipeline catastrophic failure. The review covered everything within the Security Owner Controlled Area, which encompasses everything inside the outermost fenced area of the facility including the area with the spent fuel rods. The NRC concluded that a breach and explosion of the proposed 42-inch-diameter natural gas pipeline would not adversely impact the safe operation of the Indian Point facility. Therefore, the final EIS concludes that the project will not result in increased safety impacts at the Indian Point facility.	<a href="http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150303-3044">http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150303-3044</a>
March 6, 2015	Paul Blanch letter to Federal Officials	Letter outlines major problems with gas line requesting action and require independent risk analysis.	<a href="#">PMB Letter to Senators</a>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

March 9, 2015	Paul Blanch conversation with Rao Tammara	Rao Tammara did not question the Entergy supplied 3 minute isolation time and stated he was not aware of any regulations requiring 20 minute operator response time. Because the isolation of the gas line is required to mitigate the consequences of a Design Bases Event (DBE) it must meet the same requirements as required for nuclear operations and components So was the Entergy analysis not to NRC requirements?	
March 13, 2015	Letter from Michele Evans to Assemblywoman Galef	NRC Staff recalculates damage radius distance assuming a 60 minute gas release and, using ALOHA concludes the damage radius id only slightly increased. Again the use of ALOHA is prohibited. A confirmatory, unverified calculation using the equation from RG 1.91 shows that if the release continues for 60 minutes vs 3 minutes, almost 20 times the energy will be released. This results in a damaging blast radius almost doubling to more than 2000 feet.	<a href="https://www.dropbox.com/s/gue9yw0l3qlwvfi/Response%20from%20NRC%20re%20AIM%20to%20Galef%20Letters%20of%201%20%26%202-15-2.pdf?dl=0">https://www.dropbox.com/s/gue9yw0l3qlwvfi/Response%20from%20NRC%20re%20AIM%20to%20Galef%20Letters%20of%201%20%26%202-15-2.pdf?dl=0</a>
March 17, 2015	Paul Blanch writes letter to all NRC Commissioners	Paul Blanch writes letter to NRC Commissioners requesting accelerated review of 2.206 petition and that the NRC's approval to FERC be rescinded until all issues are resolved.	<a href="#">PMB Letter to Commissioners</a>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

March 23, 2015	NRC Chairman statement at Congressional hearing	<p>Chairman stated that ALOHA was used because RG 1.91 does not calculate the real heat flux or gas flow from a ruptured gas line. Reference to NUREG 1805 states how to calculate. Chairman states that ALOHA was used to calculate gas energy released and heat flux generated.</p> <p>ALOHA use is prohibited for this scernio.</p> <p>RD 1.91 lists 17 different references that could assist in calculation gas flow and heat flux.</p> <p>ALOHA is not listed as an acceptable reference.</p> <p>Mr. Doug Tifft clairfies Chairmans statement as follows “ I did have the chance to check with our headquarters group that performed the analysis. ALOHA is used to calculate the amount of gas that would be released during a pipe break. That amount of gas is converted into pounds of TNT by our technical group. The pounds of TNT is used in the Reg Guide 1.91 formulas to determine the minimum safe distance.”</p>	<a href="#">Chairman's statement</a>
TBD	Paul Blanch writes letter to NRC Chairman pointing out that his statements to Nita Lowey are based on misinformation from the NRC Staff.		<a href="#">Later</a>
	<b>Additional Facts and Findings Risk and Failure Probability</b>		

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

	The NRC references only the "Handbook of Chemical Hazard Analysis Procedures" published by FERC, DOT and EPA. While websites indicate the handbook was updated as recently as 2013, this handbook has no references later than 1987 and does not discuss any accidents occurring in the past 25 years.		
	There is NO physical protection of the gas lines in the vicinity of Indian Point and elsewhere. Anyone wishing harm could easily cause a detonation and rupture of one or more gas lines		
	At least two Systems, Structures, and Components Important To Safety (SSC ITS) (Main Switchyard and Diesel Oil Storage Tanks) are located within 115 feet of the proposed 42 inch gas line.		Entergy's August 21, 2014 50.59 summary of analysis.

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

	<p>Indian Point (with its 2 or 3 nuclear reactors) is the only nuclear power facility, of 101 operating nuclear plants located in the United States, with one or more gas transmission lines located within protected areas of the nuclear power plant</p>		
	<p>Spectra is proposing to "enhance" the pipeline in the proximity of Indian Point with the installation of Precast Reinforced Concrete plates buried above the pipeline. This may reduce the probability of damage to the pipe from construction events however does not prevent corrosion, the primary cause of pipe failures. There is no documentation referenced in the analysis quantifying the reduced failure probability that appears to be at least one order of magnitude.</p>	<p>There is no data provided or referenced that the addition of plates reduces the gas flow or changes the probability of a rupture or explosion.</p>	

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

	<p>Negating the 3 minute isolation time and assuming a more realistic time of 60 minutes based on NTSB investigations, the amount of gas expelled would be significantly greater than the amount calculated by Entergy/NRC. The additional gas could potentially at least double and would increase the damage radius significantly. and encompass the city water tank, Emergency Operations Facility, and possibly the CST and the RWST, the primary sources for reactor core cooling.</p>	<p>A similar explosion occurred in Edison NJ in 1994 that was investigated by the National Transportation Board (NTSB). This event was the failure of a 36 inch pipe operating at about 900 PSI. According to the NTSB, it took 180 minutes to isolate the ruptured line plus an unspecified time to blow down the residual gas. Another example was a pipe rupture in May 2009 near Palm City FL. After failure, no alarms were observed in Houston TX and it took 140 minutes to terminate the gas flow even though these lines were equipped with automatic shut off valves.</p>	
	<p>The IP-2 station blackout diesel depends on the city water tank for its cooling water and IP-2 may experience a prolonged SBO along with a possible loss of all core cooling.</p>	<p>Tank is required to provide once through cooling to the SBO. Loss of this tank will disable the SBO leaving Unit 2 without any AC power.</p>	

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

	Failure of any of the gas pipelines could lead to a total loss of cooling due to a station blackout caused by the loss of the switchyards and the oil supply to the DG fuel oil tanks, to the reactor cores and the spent fuel inventory. A pipeline fire or explosion at Indian Point could result in loss of power to the entire site, secondary fires from liquid fuel storage tanks, reactor core damage and melting, asphyxiation of site personnel, spent fuel radioactivity release and massive social and economic damage for generations.		
	The NRC's analysis assumes that 1% of pipeline accidents result in a complete pipe break and that 5% of the accidents result in a fire/explosion. These statements are unsupported by any of the cited references.		Undated NRC Analysis



Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

	<p>The Safety Evaluation for the Indian Point nuclear power plant submitted by Entergy concerning the risk associated with the proposed Algonquin pipeline expansion is “seriously deficient and inadequate.” The analysis assumption of a 3-minute response is considered highly inappropriate and unrealistic for this 42” diameter, high pressure pipeline and this sensitive infrastructure given substantial data of gas transmission pipeline ruptures generating high heat flux well past one hour. This could result in loss of power to Indian Point, system failure or block emergency access. A comprehensive independent risk assessment is necessary to ensure that any equipment loss impacted by a pipeline rupture would not prevent “failsafe” shutdown of Indian Point or loss of radiation storage containment that could result in a radiation release in this densely populated region. Data repeatedly demonstrate that with complex systems, low probability events can be easily connected, significantly increasing probability and risks and may result in a disastrous failure with catastrophic consequences</p>		
	<p>There is no discussion or even a reference within the NRC/Entergy analysis as to how the radiant heat flux was calculated.</p>	<p>In many places, they assume the methane plume is bouyant and rises aloft quickly, and burns rather rapidly in seconds FAR above the ground without challenging the structures or components, if enough oxygen is available. What about the other part of the equation - the soft and human targets needed to execute the plans?</p>	<p>Where is the verification? Based upon what standard? What analysis and modeling?</p>

Statement of Facts on AIM Gas  
Transmission Project and Indian Point Nuclear Plant

	There is no simple statement that the cumulative impacts or possible loss of both lines has been considered and evaluated. Everything to date appears to be compartmentalized. The 42 s this, the 30 inch is in the IPEC eval, but what if ?? Is this valid? Thoughts?		
	Failure Consequences		

EXHIBIT 4:

Points Summarizing the Need for Further  
Information on AIM Project Health and Safety  
Impacts

**March 22, 2015**

**Points Summarizing the Need for Further Information Based on Various AIM Project Documents**

a. EPA Memo on Air Quality.

- i. Contribution of diesel and gasoline engine gas and particle (e.g., fine particle diesel emissions) to local and state air quality during the West Roxbury Lateral (WRL) construction phase of the project, in the 2015 and 2016 "ozone seasons".
- ii. Quantitative information, not just incremental criteria pollutant, methane and other GHGs emissions, but also associated ambient concentrations of these pollutants for environmental and health impact assessment analyses is needed.
- iii. Ultrafine particles from diesel construction equipment contribute emissions are associated with increases in respiratory diseases (such as asthma) and hospitalizations, especially for at risk populations, like children, elderly, etc. Impacts on population health residing near the WRL have not been addressed.

b. GZA Report.

- i. Addresses a single incident that was observed and reported from quarry impact blasting. But calculation of risks from fly-rock to M & R station does not address probabilities of likely to be many more incidents that were not observed or reported.
- ii. Calculations (and assumptions) leading to the conclusion 1 in a 10,000,000 chance of M & R station may be hit from a fly-rock during the quarry blasting operation, have not been shown or explained.
- iii. Leaks, especially related to M&R Station and periodic maintenance have not been fully characterized or their impacts assessed.
- iv. Cumulative effects cannot be ignored. The AIM report needs to quantify for its own contribution of GHG emissions to the atmosphere and its potential cumulative impacts due to other local or regional sources.
- vi. EPA rule-making/guidance for pipeline project leak mitigation requirements is scheduled for this year. In light of this important document it is reasonable to consider delay administrative and operational actions until such guidance is available.
- vii. West Roxbury and Suffolk County currently faces a variety of additional stresses due to heavy traffic, poor air quality as an environmental justice community. Moreover, it is the most sensitive community among all of the counties impacted by the AIP project in terms of high population density, highest concentration of buildings, schools, elderly residences nearby the WRL. Both incremental and cumulative impacts from WRL activities affecting a high at risk community such as West Roxbury require a more comprehensive assessment.

c. FERC Report.

i. Table 4.11.1-6 indicates that projected direct + indirect CO, NO<sub>x</sub> emissions during the construction Phases (2015 and 2016) exceed or at the conformity thresholds these pollutants in Suffolk County, MA WRL AIM portion. According to EPA, the purpose of the general conformity rule is to: 1) Ensure that federal activities do not cause or contribute to new violation of National Ambient Air Quality Standards (NAAQS), 2) Ensure that actions do not cause additional or worsen existing violations of or contribute to new violations the NAAQS, and 3) Ensure that attainment of the NAAQSs (e.g., for ozone in the Boston Metropolitan area) is not delayed. These considerations and the emissions data provided support the earlier statements made for the need for more comprehensive air quality and health risk evaluations.

ii. Report does not provide predicted air quality (AQ) concentration increases due to construction and operation of the WRL portion of the proposed pipeline within an area already in non-attainment of the ozone National Ambient Air Quality Standard (NAAQS).

iii. In page 3-16 of the report, it is stated that that: "...any alternatives to WRL will increase the pipeline length and AIM has not identified an alternative starting point for the West Roxbury Lateral that would be preferable to the proposed route". This is neither a proper justification nor a demonstration of whether suitable alternatives to WRL were considered (and how), in particular from the perspective of community environment and health in West Roxbury, MA near the chosen WRL route.

iv. Estimated high levels of fugitive dust to be emitted during construction: Most of these will be in the form of coarse size particles, but fugitive dust could still be an issue beyond the nuisance factor and local deposition impacts. Mitigation approaches like watering things down may help some, but these emissions may still lead to releases of finer and inhalable dust particles as well. These fine particles could also contain metals and organic contaminants in soil which may result in allergic or respiratory symptoms among the nearby sensitive populations.

## EXHIBIT 5:

Table Comparing Observations of Dr. Kiviat  
Regarding Species of Special Concern to Information  
in Table 4.7.1 and in Accompanying Text in Final EIS

*Comparison of observations of Dr. Kiviat regarding species of special concern to the information in Table 4.7.1-1 and in the accompanying text in the Final EIS.*

### SPECIAL STATUS ANIMALS

1. SPECIES	2. FINAL EIS ANALYSIS	3. DR. KIVIAT'S ANALYSIS
4. BIRDS		
5. Piping Plover	6. Federal Threatened and NYS Endangered listed - no effect	7.
8. Roseate Tern	9. Federal and NYS Endangered listed - no effect	10.
11. Sedge Wren	12. None	13. (Threatened) could nest on the ROW
14. Cooper's Hawk	15. None	16. (Special Concern) - could nest in woodland next to ROW
17. Northern Harrier	18. None	19. (Threatened) - could forage for meadow voles and other small mammals and birds along the ROW
20. Whip-Poor-Will	21. None	22. (Special Concern) - could breed in BMR next to ROW)
23. Bald Eagle	<p>24. "Protected under the BGEPA (16 USC 668-668d), which prohibits the taking of eagles, their eggs, or their nests. Bald eagles are also state-listed as threatened in all states crossed by the Project.</p> <p>25. On October 24, 2014, FERC consulted with the FWS and the FWS concluded that the Project would not</p>	26. May be present in ROW

	result in harm to bald eagles (FWS, 2014)."	
27. Least Bittern	28. Field Survey Results: None present	29. "That DEC reported no records of least bittern near the pipeline does not mean they are not in Lent's Cove (West of Route 9 from RH). The least bittern is a difficult species to detect because it hides in the cattails and reeds, and may not vocalize much."
30. Peregrine Falcon	31. None	32. May be present in ROW
33. Common Raven	34. None	35. (Listed as Threatened by the Westchester County Dept. of Parks) Saw and heard fly over the ROW at UTM ca. 4568274, 590514. This species is
36. Scarlet Tanager	37. None	38. (SGCN) - forest adjoining the Algonquin ROW west of Stoney Street supports
39. Wood Thrush	40. None	41. (SGCN) - forest adjoining the Algonquin ROW west of Stoney Street supports
<b>42. BUTTERFLIES</b>		
43. Northern metalmark	44. None	45. (SGCN) is a very rare butterfly that may occur in transmission ROW habitat



46. BATS		
47. Indiana Bat	<p>48. (E) Endangered - Present. Not likely to adversely affect.</p> <p>49. _____</p> <p>50. "FWS identified a section of the Stony Point to Yorktown Take-up and Relay segment as having the potential to provide suitable summer habitat for the Indiana bat."</p>	51. (Federally and NYS listed as Endangered, SGCN) Trees in the south-facing forest edge (northern ROW edge), may provide summer roosts and nursery sites
52. Northern Long-Eared Bat	<p>53. (PE) Proposed Endangered - Present. Not likely to adversely affect</p> <p>54. _____</p> <p>55. "Algonquin would conduct any required tree clearing for the Project within the 3-mile known bat habitat protection area between October 1 and March 31 when the bats are in hibernation"</p> <p>56. _____</p> <p>57. "[W]e have concluded that the Project would <i>not likely jeopardize the continued existence</i> of the northern long-eared bat"</p>	58. (Candidate for Federal listing, SGCN). Trees in the south-facing forest edge (northern ROW edge), may provide summer roosts and nursery sites
59. Small-Footed Bat	60. None	61. (New York State species of Special Concern and SGCN) Rocks with centimeter-wide cracks and a south-facing exposure are potential summer

		roosting habitat
<b>62. REPTILES &amp; AMPHIBIANS</b>		
63. Eastern Fence Lizard	64. None	65. (State Threatened Species, SGCN); extant population on Anthony's Nose and historic record from Dickerson Mountain, both nearby, potential habitat (sun-exposed rock outcrops and boulder piles) along the ROW
66. Marbled Salamander	67. None	68. (State Special Concern, SGCN) - The wooded swamp between the ROW and Montrose Station Road at UTM ca. 4568521, 541292 contains potential breeding habitat for these species, as does the extensive swamp south of the ROW at UTM ca. 4568850, 591820.
69. Jefferson Salamander	70. None	71. (State Special Concern, SGCN) - The wooded swamp between the ROW and Montrose Station Road at UTM ca. 4568521, 541292 contains potential breeding habitat for these species, as does the extensive swamp south of the ROW at UTM

		ca. 4568850, 591820.
72. Blue-Spotted Salamander	73. None	74. (Special Concern) - The wooded swamp between the ROW and Montrose Station Road at UTM ca. 4568521, 541292 contains potential breeding habitat for these species, as does the extensive swamp south of the ROW at UTM ca. 4568850, 591820.
75. Four-Toed Salamander	76. None	77. (SGCN), - The wooded swamp between the ROW and Montrose Station Road at UTM ca. 4568521, 541292 contains potential breeding habitat for these species, as does the extensive swamp south of the ROW at UTM ca. 4568850, 591820.
78. Wood Frog	79. None	80. Lay eggs and develop as larvae in pools - The wooded swamp between the ROW and Montrose Station Road at UTM ca. 4568521, 541292 contains potential breeding habitat for these species, as does the extensive swamp south of the ROW at UTM ca.

		4568850, 591820.
81. Spotted Turtle	82. None	83. (Special Concern), I observed the remains of depredated turtle eggs from three or more nests in one spot on the ROW in the eastern portion of Blue Mountain Reservation (probably at about UTM 4569218, 592162). These were not snapping turtle eggs. The eggs could have been from spotted turtle, wood turtle, or box turtle, all Special Concern and SGCN in New York, or from painted turtle, an unlisted species.
84. Wood Turtle	85. None	86. (Special Concern), could occur on the ROW see above
87. Box Turtle	88. None	89. (Special Concern), could occur on the ROW see above
90. Bog Turtle	91. Federal and NYS (T) Threatened - Could be Present. Not likely to be adversely affect 92. _____ 93. "[We] conclude that the Project <i>may affect, but would not likely adversely affect</i> the bog turtle."	94. (Federal and NYS Threatened) Could occur on the ROW
95. Worm Snake	96. None	97. (Special Concern) -

		worm snake could occur in Blue Mountain Reservation
98. Timber Rattlesnake	<p>99. No habitat identified in workspace; habitat identified adjacent to Algonquin's existing rights-of-way</p> <p>100. _____</p> <p>101. "Given the complex construction schedule that includes pipeline outages, Algonquin <i>would not be able to adhere to the</i> NYSDEC's recommended seasonal restrictions for timber rattlesnakes."</p>	102. (State Threatened, SGCN) occurs in the Hudson Highlands in Putnam and Dutchess counties. There is potential habitat in Blue Mountain Reservation
<b>103. OTHER ANIMALS</b>		
104. New England Cottontail	<p>105. (C) Candidate Endangered - <i>would not contribute to a trend toward federal listing</i></p> <p>106. _____</p> <p>107. "the FWS explained that the final rule and list status for New England Cottontail would not likely occur until after the AIM Project completed construction (FWS, 2014f; FWS, 2014g). As such, the FWS indicated that the New England cottontail was not an issue for the Project"</p>	108. (Special Concern), - could occur on shrubby portions of ROW such as in Yorktown west of Lexington Avenue - is a candidate for federal listing
109.	110.	111.

## SPECIAL STATUS PLANTS

112. SPECIES	113. FINAL EIS ANALYSIS	114. DR. KIVIAT'S ANALYSIS
115. Virginia snakeroot ( <i>Aristolochia serpentaria</i> )	116. None	117. NYS S2 Endangered - ROW is less than 4 km from a large population of the rare plant; inconspicuous herbaceous plant could occur in rocky woods adjoining the ROW
118. pinesap ( <i>Monotropa hypopitys</i> )	119. None	120. regionally-rare plant; found near the "Maint. Area" stake
121. Little bluestem ( <i>Schizachyrium scoparium</i> )	122. None	123. the sole larval food plant of multiple species of rare butterflies
124. Small whorled pogonia 125. ( <i>Isotria medeolodes</i> )	126. (E) Endangered - No effect	127.
<b>128. FOUND IN SIMILAR HABITAT (DURING SUMMER REVIEW)</b>		
129. Sedges ( <i>Carex</i> spp.)	130. None	131. Few were recorded on the wetland field data sheets in the delineation report (TRC 2014a), despite the abundance and diversity of sedges on upland and wetland habitats of the ROW
132. Bush's Sedge ( <i>Carex bushii</i> );	133. None	134. (New York Natural Heritage Program rank S3) - on right-of-way west of Stony Street; two locations between Stony Street and Lexington Avenue
135. Narrow- leaved sedge ( <i>Carex amphibola</i> )	136. None	137. (NYNHP rank S1, listed as Endangered in New York). - species at two locations on the right-of-way
138. New Jersey tea ( <i>Ceanothus</i> )	139. None	140. (regionally-rare). - I found several clumps of this

<i>americanus)</i>		small subshrub, in flower, on a south-facing slope in the northern part of the right-of-way between Stony Street and Lexington Avenue
141. butterfly-weed (orange milkweed; <i>Asclepias tuberosa</i> ),	142. None	143. (regionally-rare) - south-facing slope in the northern part of the right-of-way between Stony Street and Lexington Avenue
144. Dodder ( <i>Cuscuta</i> ).	145. None	146. At least two plants of dodder on the ROW on an upland slope west of Wetland A-10 may be one of several rare dodder species that occur in the Hudson Valley: <i>Cuscuta campestris</i> [S1, State Endangered], <i>Cuscuta compacta</i> [S3], <i>Cuscuta pentagona</i> [S3], and <i>Cuscuta polygonorum</i> [S1, State Endangered]
147. River birch ( <i>Betula nigra</i> );	148. None	149. Rare S3) was reported in Wetland B13 in the Town of Cortlandt (TRC 2014a). Inasmuch as " <i>nigra</i> " means black, this could be a recording error for black birch ( <i>Betula lenta</i> , a common species)

EXHIBIT 6:  
Table of Supplemental Submissions



**Exhibit 5 - Table of Supplemental Submissions**

Date	Submittal	Class/Type	Description	Public
09/02/2014	20140902-529309	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits its responses to the NYSDEC request for additional information	Public
09/02/2014	20140902-5292	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits its responses to the USACE New York District's request for additional information.	Public
09/02/2014	20140902-5289	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits its responses to CTDEEP request for additional information for the Algonquin Incremental Market Project.	Public
09/02/2014	20140902-5280	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information including a response to Condition Number 31 of the DEIS.	Public
09/03/2014	20140903-5049	Report	Algonquin submits its Final Survey Reports for Federally-Listed Species for the Algonquin Incremental Market Project.	No
09/03/2014	20140903-5048	Report	Algonquin submits its Final Survey Reports for Federally-Listed Species for the Algonquin Incremental Market Project.	Public
09/11/2014	20140911-5188	Pleading/Motion/Answer/ Response to a Pleading/Motion	Algonquin submits its response to FERC Data Request issued on August 28, 2014.	Public
09/19/2014	20140919-5149	Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information including responses to Conditions Number 29, 30, & 31 of the DEIS.	Public
09/29/2014	20140929-5333	Report/Form / Certificate of Compliance Report	Algonquin - Response to DEIS, Docket No. CP14-96.	Public
09/29/2014	20140929-5299	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information.	Public
10/14/2014	20141014-5494	Pleading/Motion/ Answer/Response to a Pleading/Motion	Response to Comments on the Draft Environmental Impact Statement of Algonquin under Docket No. CP14-96.	Public
10/20/2014	20141020-5195	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits as supplemental information under CP14-96 its responses to data requests from CT DEEP and additional information filed with CT DEEP as part of its 401 Water Quality Certification.	Public
10/20/2014	20141020-5179	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits as supplemental information under CP14-96 its responses to USACE-NE requests for additional information.	Public
10/29/2014	20141029-5100	Applicant Correspondence/ Supplemental/Additional Information	Supplemental Information of Algonquin.	Public

10/31/2014	20141031-5297	Applicant Correspondence/ Deficiency Letter/Data Response	Algonquin submits its response to FERC Data Request issued on October 22, 2014.	No
10/31/2014	20141031-5296	Applicant Correspondence/ Deficiency Letter/Data Response	Algonquin submits its response to FERC Data Request issued on October 22, 2014.	Public
12/02/2014	20141202-5173	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information.	Public
12/11/2014	20141211-5160	Report/Form/ Certificate of Compliance Report	Algonquin submits its response to the FERC Data Request issued on December 2, 2014.	No
12/11/2014	20141211-5159	Report/Form/ Certificate of Compliance Report	Algonquin submits its response to the FERC Data Request issued on December 2, 2014.	Public
12/16/2014	20141216-5325	Applicant Correspondence/ Supplemental/Additional Information	Algonquin hereby submits supplemental information for its AIM Project.	Public
12/16/2014	20141216-5228	Applicant Correspondence/ Supplemental/Additional Information	Algonquin hereby submits a letter to FERC.	Public
12/19/2014	20141219-5418	Applicant Correspondence/ Supplemental/Additional Information	Algonquin hereby submits supplemental information regarding cultural resources for its AIM Project.	No
12/19/2014	20141219-5417	Applicant Correspondence/ Supplemental/Additional Information	Algonquin hereby submits supplemental information regarding cultural resources for its AIM Project.	Public
12/19/2014	20141219-5370	Applicant Correspondence/ Supplemental/Additional Information	Algonquin re-submits as public its response to the FERC Data Request issued on December 2, 2014.	Public
12/22/2014	20141222-5373	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits as supplemental information its final consolidated wetland mitigation plan.	Public
12/23/2014	20141223-5262	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits its response to the FERC Data Request issued on December 18, 2014.	Public
01/16/2015	20150116-5127	Applicant Correspondence/ Supplemental/Additional Information	Supplemental Information of Algonquin under the AIM Project, Docket No. CP14-96.	No

01/16/2015	20150116-5126	Applicant Correspondence/ Supplemental/Additional Information	Supplemental Information of Algonquin under the AIM Project, Docket No. CP14-96.	Public
01/21/2015	20150121-5200	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits its response to the FERC Data Request issued on January 16, 2015.	Public
<b>01/23/2015</b>	<b>20150123-4001</b>	<b>FEIS Report</b>	<b>Final Environmental Impact Statement for the Algonquin Incremental Market Project.</b>	<b>Public</b>
02/20/2015	20150220-5237	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information on additional correspondence and documentation of consultation with State Historic Preservation Officers, Native American tribes, and consulting parties.	No
02/20/2015	20150220-5236	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information on additional correspondence and documentation of consultation with State Historic Preservation Officers, Native American tribes, and consulting parties.	Public
02/27/2015	20150227-5422	Applicant Correspondence/ Supplemental/Additional Information	Supplemental Information of Algonquin.	No
02/27/2015	20150227-5421	Applicant Correspondence/ Supplemental/Additional Information	Supplemental Information of Algonquin.	Public
<b>03/03/2015</b>	<b>20150303-3044</b>	<b>Commission Order</b>	<b>Order issuing certificate and approving abandonment re Algonquin.</b>	Public
03/23/2015	20150324-5020	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information.	No
03/23/2015	20150324-5019	Applicant Correspondence/ Supplemental/Additional Information	Algonquin submits supplemental information.	Public

EXHIBIT 7:  
NY State Attorney General's comments to FERC



STATE OF NEW YORK  
OFFICE OF THE ATTORNEY GENERAL

ERIC T. SCHNEIDERMAN  
ATTORNEY GENERAL

DIVISION OF SOCIAL JUSTICE  
ENVIRONMENTAL PROTECTION BUREAU

September 29, 2014

**Via Electronic Submission**

The Honorable Kimberly D. Bose  
Secretary  
Federal Energy Regulatory Commission  
Room 1A East  
888 First Street, N.E.  
Washington, D.C. 20426

Re: Electronic Filing:  
Algonquin Gas Transmission, LLC, Docket No. CP14-96-000,  
New York State Office of the Attorney General  
Comments on Draft Environmental Impact Statement

Dear Secretary Bose:

Enclosed is the New York State Office of the Attorney General's comments on the draft environmental impact statement for the Algonquin gas pipeline project, submitted by electronic filing.

Please contact us should you have any questions concerning this filing or encounter difficulty opening the document or locating the cited references.

Respectfully submitted,

*Philip Bein*

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**UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

-----X

In the Matter of:

Docket No: CP14-96-000

Algonquin Gas Transmission, LLC

September 29, 2014

For a Certificate of Public Convenience and Necessity.

-----X

**COMMENTS OF THE NEW YORK STATE OFFICE OF THE  
ATTORNEY GENERAL ON THE DRAFT ENVIRONMENTAL IMPACT  
STATEMENT FOR THE ALGONQUIN INCREMENTAL MARKET PROJECT**

Intervener New York State Office of the Attorney General (N.Y. Attorney General) respectfully submits these comments concerning the draft environmental impact statement (DEIS) for the Algonquin natural gas pipeline Incremental Market Project (the Algonquin Project). The N.Y. Attorney General is the chief legal officer of the State of New York whose responsibilities include intervention in legal and administrative proceedings to advance the interests of the State, enforce State laws as well as Federal laws such as the National Environmental Policy Act, and protect the public health, environment, and economic interests of New York citizens.

The New York Attorney General moved to intervene in this proceeding to protect the State and its citizens from the Algonquin Project's potential adverse impacts: (i) to water quality in the New York City Watershed, the source of

drinking water for nine million State residents; (ii) to climate change as a result of increased greenhouse gas emissions; and (iii) to operations of the Indian Point nuclear facilities and systems which could impair public safety. See N.Y. Attorney General Motion to Intervene, FERC Docket CP14-96-000 (April 8, 2014) (hereby incorporated by reference).

Upon review of the DEIS, several issues of concern remain. The Algonquin Project's plans for preventing stormwater pollution are deficient in significant respects and need to be modified to mitigate the potential for adverse impacts to water quality. In addition, the Algonquin Project needs to employ specific cost effective technologies and practices to mitigate carbon dioxide and methane emissions that contribute to climate change. Also, fifty years ago, the federal government authorized the construction of the Algonquin pipeline and the Indian Point nuclear facility in close proximity to one another. The government's current DEIS is vague, incomplete, and deficient concerning the interaction of the project, the existing pipeline, and their alternatives with the nuclear facilities' systems, structures, and operations.

### **REGULATORY FRAMEWORK**

The National Environmental Policy Act, 42 U.S.C. §§ 4321-37, requires all federal agencies to examine environmental impacts that could be caused by their discretionary actions. As a federal agency, the FERC must comply with NEPA. *Calvert Cliffs Coordinating Comm. v. U.S. Atomic Energy Commission*, 449 F.2d

1109 (D.C. Cir. 1971); 18 C.F.R. Part 380. As made clear in the regulations promulgated by the President's Council on Environmental Quality ("CEQ"), NEPA was designed to "provide a full and fair discussion of significant environmental impacts and shall inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. NEPA directs all federal agencies, "to the fullest extent possible" to comply with this policy and, *inter alia*, to use a systematic and interdisciplinary approach in considering environmental issues, and, before taking any major Federal action significantly affecting the quality of the human environment, to generate a detailed environmental impact statement. 42 U.S.C. § 4332(2)(A), (C) and (E). NEPA also requires a comparative analysis of the environmental consequences of the alternatives before the agency. 42 U.S.C. § 4332(2)(C)(iii); 40 C.F.R. § 1502.14(d).

The EIS is intended to guarantee that the relevant information regarding the costs and benefits of federal action and its alternatives will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision. *Center for Biological Diversity v. U.S. Dept. of Interior*, 623 F.3d 633 (9th Cir. 2010) (*citing Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004)). Publication of an EIS, both in draft and final form, also serves a larger informational role. It gives the public the assurance that the agency has indeed considered environmental concerns in its decision making process, and,



perhaps more significantly, provides a springboard for public comment. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348-349 (1989). NEPA requires federal agencies to stop and objectively identify the environmental effects of their discretionary actions and consider alternative means to mitigate those effects – before approving or undertaking any major action that may affect the environment.

CEQ has promulgated regulations pursuant to NEPA (40 C.F.R. Parts 1500-1508) as has FERC (18 C.F.R. Part 380). Although FERC allows applicants to prepare an initial draft of the environmental review documents, the duty to comply with NEPA rests with the federal agency itself.

### **THE ALGONQUIN PROJECT**

Algonquin has applied for approval of the project pursuant to sections 7(b) and 7(c) of the Natural Gas Act. The Algonquin Project would (i) construct, install, operate, and maintain approximately 37.6 miles of take-up and relay, loop, and lateral pipeline facilities, and appurtenances in New York, Connecticut, and Massachusetts; (ii) modify six existing compressor stations in New York, Connecticut, and Rhode Island, resulting in the addition of 81,620 horsepower (HP) of compression; (iii) modify 24 existing metering and regulating (M&R) stations and construct three new M&R stations; (iv) abandon certain existing facilities; and (v) approve certain rates. The Algonquin Project seeks to facilitate the transportation of large amounts of natural gas from the Southeast and Midwest to New England.

The project's activities in New York State include take up and relay of more than 15 miles of pipeline, a new 1.2 mile crossing under the Hudson River, upgrade of two compressor stations, and upgrade of two metering and regulating stations. Much of these activities would occur within the East of Hudson portion of the New York City Watershed.

#### **JUNE 4, 2014 MEETING WITH ALGONQUIN**

The N.Y. Attorney General and its consultant met with Algonquin's representatives and technical consultants about the project on June 4, 2014, and expressed its concerns about the project's potential adverse environmental impacts relating to the New York City Watershed, methane emissions, and the Indian Point nuclear facilities. The N.Y. Attorney General's consultant on stormwater pollution issues, Donald Lake, P.E., reviewed Algonquin's prior submittals to FERC, including the project's Erosion and Sedimentation Control Plan, dated October 8, 2013, and provided a list of seven preliminary issues of concern at the meeting. Additional documents were subsequently reviewed by the N.Y. Attorney General, including the DEIS, the Stormwater Pollution Prevention Plan (SWPPP) for the project (other than the Southeast Compressor station), dated August 2014, and the SWPPP for the Southeast Compressor station, dated August 2014. Algonquin made the SWPPPs available for review on September 2, 2014. The SWPPPs addressed some, but not all, of the preliminary issues raised by Mr. Lake at the June meeting.

At the meeting, Algonquin informally shared its plans to mitigate the project's direct, fugitive, and vented methane emissions using best practices. However, these plans have not been incorporated into the DEIS. Algonquin also confirmed that the preferred route for the Hudson River crossing and east-of-Hudson connection would be further away from the Indian Point Unit 3 nuclear reactor and spent fuel pool than the existing river crossing and connection.

### **STORMWATER POLLUTION AND THE NEW YORK CITY WATERSHED**

As discussed below and in the Technical Appendix Concerning Stormwater Pollution, Algonquin's plans for addressing stormwater pollution are deficient in significant respects and need to be revised to mitigate the likelihood of adverse water quality impacts in the New York City Watershed.

The proposed Algonquin Project includes 2.3 miles of new pipeline and a new compressor station to be located within the Croton System in the East of Hudson portion of the New York City Watershed. Stormwater runoff from these portions of the project will drain to the East Branch and New Croton Reservoirs within the Croton system. The Croton System can supply as much as thirty percent of the water relied on by New York City and other communities each day. *Friends of Van Cortlandt Park v. City of N.Y.*, 95 N.Y. 623, 626 (2001).

The East Branch and New Croton reservoirs, like other reservoirs within the Croton System, are "eutrophic," having excessive algae growth in the growing season because of discharges of the pollutant phosphorus into these reservoirs.

Excessive algae growth impairs the taste and odor of reservoir water and depletes levels of dissolved oxygen in the reservoir's bottom waters, impairing aquatic life and releasing metals into the water.<sup>1</sup> Eutrophic conditions also result in increased levels of organic carbon in the water.<sup>2</sup>

As a result of phosphorus pollution, these reservoirs fail to comply with water quality guidelines and standards established by the New York State Department of Environmental Conservation (DEC) pursuant to State law and the federal Clean Water Act, 33 U.S.C. § 1251 *et seq.* The watershed of the East Branch and New Croton reservoirs are “phosphorus restricted basins” because phosphorus concentrations exceed DEC guidelines. *See* 10 NYCRR §§ 128-1.6(a)(80), 4.1(c). The sources of the phosphorus pollution include upstream wastewater treatment plants and other point sources (including stormwater runoff discharged from municipal storm sewer pipes) and non-channelized stormwater runoff.

The construction and development of land is a major source of phosphorus and other pollutants, which discharge into the reservoirs in stormwater runoff. “Stormwater pollution is one of the most significant sources of water pollution in the nation.” *Environmental Def. Ctr., Inc. v. EPA*, 344 F.3d 832, 840 (9th Cir. 2003). According to EPA, “[u]ncontrolled storm water discharges from areas of urban development and construction activity negatively impact receiving waters by

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<sup>1</sup> *Watershed Management for Potable Water Supply: Assessing the New York City Strategy*, National Research Council, at 106-07 (2000) (hereinafter NRC Study).

<sup>2</sup> *See* NRC Study, *supra*, at 2.

changing the physical, biological, and chemical composition of the water, resulting in an unhealthy environment for aquatic organisms, wildlife and humans,” and can “severely compromise” water quality.<sup>3</sup>

Discharges of stormwater from construction sites include sediment, a pollutant which also serves as a carrier of other pollutants, such as nutrients (including phosphorus), metals, organic compounds, and pathogens. “It is generally acknowledged that erosion rates from construction sites are much greater than from almost any other land use.”<sup>4</sup> Sediment loads in stormwater discharges from construction sites are typically 1,000 to 2,000 times the sediment loads in discharges from undeveloped forested land.<sup>5</sup>

Post-construction stormwater discharges from developed areas are also a major source of pollution to the waters of the United States. “Urbanization alters the natural infiltration capability of the land and generates a host of pollutants . . . thus causing an increase in storm water runoff volumes and pollutant loadings.”<sup>6</sup> Land development “can result in both short- and long-term adverse impacts to water quality in lakes, rivers and streams within the affected watershed by

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<sup>3</sup> “National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Stormwater Discharges; Final Rule,” 64 Fed. Reg. 68722, 68724, 68728. (Dec. 8, 1999) (hereinafter, 1999 Preamble & Rule).

<sup>4</sup> *Id.*

<sup>5</sup> EPA, “Storm Water Phase II Final Rule: Small Construction Program Overview (Fact Sheet 3.0),” EPA 833-F-00-013 (Jan. 2000), available at <http://www.epa.gov/npdes/pubs/fact3-0.pdf>.

<sup>6</sup> 1999 Preamble & Rule, 64 Fed. Reg. at 68725.

increasing the load of various pollutants in receiving water bodies, including sediments, metals, organic compounds, pathogens, and nutrients.”<sup>7</sup> EPA has determined that urban runoff and storm sewer discharges were the second leading source of water quality impairment in estuaries and the third leading source of such impairment in lakes, ponds and reservoirs.<sup>8</sup>

Stormwater pollution to the East Branch and New Croton reservoirs is also of great concern because it carries pathogens. The watersheds for these reservoirs lie within the “60 day travel time” to consumers of New York City water . Discharges within this geographic area raise heightened concerns because 60 days is generally viewed as the life span for many disease-causing microbes in fresh water. The pathogens of central concern in the Watershed are *Cryptosporidium* oocysts and *Giardia* cysts. These microbes can cause severe intestinal distress and can be deadly for persons with compromised immune systems. These pathogens are highly resistant to destruction by chlorination, the disinfectant relied on to treat Croton System water.

The Algonquin Project’s plans for preventing stormwater pollution of the East Branch and New Croton Reservoirs are inadequate. As discussed in detail in the Technical Appendix Concerning Stormwater Pollution, the SWPPPs developed

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<sup>7</sup> EPA, Draft Proposed Rule for Effluent Limitations Guidelines and New Source Performance Standards for the Construction and Development Category, Docket No. 01644, at 49-50. February 12, 2002.

<sup>8</sup> EPA, “National Water Quality Inventory: 2000 Report at 22 & 30,” EPA-841-R-02-001 (Aug. 2002), available at <http://www.epa.gov/305b/2000report/chp3.pdf> & <http://www.epa.gov/305b/2000report/chp4.pdf>.

by Algonquin's consultants contain numerous deficiencies and internal contradictions. For example, details for stormwater management practices are absent and applicable infiltration basin design requirements are not satisfied. No soil testing has been performed to justify the use of infiltration treatment practices, inconsistent infiltration rates are employed, and the time of concentration for individual drainage areas has not been calculated. These and other deficiencies mean that the project cannot be expected to prevent stormwater pollution as required by DEC's General Permit for Stormwater Discharges from Construction Activities.

Accordingly, unless these deficiencies are corrected in accordance with the detailed comments set forth in the Technical Appendix (accompanying this submission), the Algonquin Project will exacerbate existing water quality problems in the East Branch and New Croton Reservoirs. More phosphorus, metals, and other pollutants – possibly including pathogens -- will discharge into these waterbodies, contributing to the impairment of these vital drinking water supplies.

### **GREENHOUSE GAS EMISSIONS INCLUDING METHANE**

Climate change is a reality and is occurring now primarily due to human-induced emissions of greenhouse gases (or GHGs).<sup>9</sup> The rate and magnitude of how climate continues to change will be greatly influenced by the amount of greenhouse gases emitted to the atmosphere. President Obama's Climate Action Plan calls on

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<sup>9</sup> United States Third National Climate Assessment, 2014.

the nation to reduce our greenhouse gas emissions by 17% below 2005 levels by year 2020.<sup>10</sup>

The Algonquin Project will use and transport natural gas, which is primarily composed of methane. Methane is a potent greenhouse gas that comprises nearly nine percent of total U.S. GHG emissions.<sup>11</sup> In 2012, over 22% of U.S. methane emissions were from the natural gas industry, with the transmission and storage sector accounting for the largest percentage (34%) of these emissions.<sup>12</sup> With a global warming potential at least 25 times greater than that of carbon dioxide,<sup>13</sup> methane emissions play an important role in driving climate change. The federal government's Climate Action Plan Strategy to Reduce Methane Emissions concludes methane reduction steps will be necessary to help meet the Administration's goal of reducing U.S. GHG emissions in the range of 17% below 2005 levels by 2020.<sup>14</sup> Reductions of GHG emissions to such levels are needed to lessen the likelihood of the most severe effects of climate change. Thus, FERC must take a "hard look" at direct emission of methane, carbon dioxide emissions resulting

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<sup>10</sup> The President's Climate Action Plan, June 2013, *available at* [www.whitehouse.gov/energy/climate-change](http://www.whitehouse.gov/energy/climate-change). New York State seeks to reduce greenhouse gas emissions by 80 percent below 1990 levels by 2050.

<sup>11</sup> Climate Action Plan: Strategy to Reduce Methane Emissions, March 2014, *available at* [www.whitehouse.gov/blog/2014/03/28/strategy-cut-methane-emissions](http://www.whitehouse.gov/blog/2014/03/28/strategy-cut-methane-emissions).

<sup>12</sup> *Id.*

<sup>13</sup> 40 C.F.R. Part 98 , Table A-1 to Subpart A.

<sup>14</sup> Climate Action Plan: Strategy to Reduce Methane Emissions, March 2014.



from compressors stations and other GHG emissions associated with the Project and consider mitigation options.

#### Algonquin Project Greenhouse Gas Emissions

The Algonquin Project will be a large source of greenhouse gas emissions, resulting in the generation of a maximum of 1,030,133 tons CO<sub>2</sub>e per year (934,521 metric tons). The DEIS concludes “Although the GHG emissions appear large, the emissions are very small (0.4) in comparison to the 2000 inventory of GHG emissions in the New England region of the United States of 224.01 metric tons of CO<sub>2</sub>e (NESCAUM, 2004).”<sup>15</sup> FERC’s DEIS is deficient in that it provides no analysis of greenhouse gas mitigation options and proposes no greenhouse gas mitigation measures.

#### Significance of the Project’s Greenhouse Gas Emissions Relative to Northeast U.S. Emissions

The DEIS’s evaluation of the Algonquin Project’s GHG emissions relative to Northeast U.S. GHG emissions in order to create the perception that these emissions are “very small” is misplaced. The vast array of individual GHG emission sources across the Northeast U.S. economy precludes using relative percentages for individual projects to determine significance. Such an approach would impermissibly allow a reviewing agency to find nearly all potential GHG emission sources insignificant and is contrary to 40 C.F.R. § 1508.7. *See Center for Biodiversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir.

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<sup>15</sup> DEIS p. 4-236.

2008)(agency rules or actions might have an “individually minor” effect on the environment, but are “collectively significant actions taking place over a period of time”).

The DEIS uses an incorrect yardstick to measure significance. Instead, of dismissing the project’s GHG emissions as “very small,” NEPA requires FERC to identify, analyze, and develop mitigation alternatives for such cumulative impacts, which are defined as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7. Indeed, FERC is currently reviewing applications for the construction and operation of several interstate natural gas pipelines and associated compressor stations that involve significant cumulative impacts in the context of greenhouse gases.. *See, e.g.*, Constitution Pipeline (New York), Tennessee Gas Pipeline (New York), UTOPIA Gas Pipeline (Ohio to Michigan). The Algonquin Project, the existing Algonquin Pipeline, and other gas pipelines share a common objective: to facilitate the transportation of natural gas to market. Given the common objective across these projects, the FERC must identify, analyze, and develop mitigation alternatives for the greenhouse gas emissions.

### Failure to Evaluate the Project's Greenhouse Gas Mitigation Options

The DEIS's omission of any consideration of mitigation options for methane and other GHG emissions from the Algonquin Project compressor stations, pipeline, and metering and regulating stations (M&R stations) is a material deficiency, and is inconsistent with the Commission's recent approach to mitigation, even in a case where "significant" GHG impact is unlikely. In the *Sabine Pass* proceeding, FERC performed an environmental assessment for a proposal to construct and operate a natural gas liquefaction and export facility in Cameron Parish, Louisiana. There, FERC examined, among other things, GHG emissions associated with the new facility. *Sabine Pass*, Environmental Assessment, § 2.7. Although FERC determined that the GHG emissions of the Sabine Pass project did not rise to the level of "significance" warranting a full EIS, it nonetheless identified and required the applicant to comply with mitigation measures to reduce GHG emissions, including the selection of turbines which have a better thermal efficiency and reduced CO<sub>2</sub> emissions. *See Sabine Pass*, 140 FERC ¶ 61,076 at 9-10. The *Sabine Pass* decision demonstrates the ability to mitigate carbon dioxide and methane emissions and should inform the regulatory and decisional process for the Project.

The National Gas Act and NEPA require FERC to acknowledge the potential impacts and to identify alternatives to mitigate such impacts. Clearly, it is within FERC's broad authority to require the applicant to implement mitigation practices.

The DEIS should identify and consider a variety of mitigation options for the entire extent of the project. Compressor stations should consider use of appropriately-sized, high efficiency gas turbines and low-leak equipment, such as centrifugal compressors with dry seals as discussed in a recent EPA Whitepaper.<sup>16</sup> To minimize emissions from the pipelines, the U.S. Environmental Protection Agency (USEPA) Natural Gas STAR program identifies a number of cost-effective methane reduction technologies and practices for the natural gas industry, with estimated payback values.<sup>17</sup> Similarly, a recent report by ICF International on the economic analysis of methane emission reduction opportunities in the U.S. oil and gas industry identifies a range of cost-effective technologies and practices to mitigate methane releases, including emissions from blowdowns and other pipeline venting practices, and compressor station upgrades.<sup>18</sup> Given these deficiencies, FERC should revise and supplement its draft EIS and take a hard look at such mitigation options and alternatives. Based upon that review and analysis, FERC should then require the project to implement cost effective greenhouse gas reduction technologies and practices.

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<sup>16</sup> EPA Whitepaper, Oil and Natural Gas Sector Compressors, April 2014 *available at* [www.epa.gov/airquality/oilandgas/whitepapers.html](http://www.epa.gov/airquality/oilandgas/whitepapers.html)

<sup>17</sup> See <http://www.epa.gov/gasstar/tools/recommended.html>.

<sup>18</sup> ICF International, March 2014, Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries.

## ENVIRONMENTAL IMPACTS AND INTERACTIONS BETWEEN INDIAN POINT FACILITIES AND ALGONQUIN PIPELINES

The federal government has authorized the construction and operation of large interstate gas pipelines and nuclear power facilities in the same area of the Village of Buchanan.

### Background

In 1951, the federal government authorized the Algonquin Gas Transmission Corporation to construct and operate an interstate pipeline from New Jersey to Massachusetts designed to convey natural gas to New England.<sup>19</sup> As authorized by the Federal Power Commission, the Algonquin pipe line route traverses southern New York State, crosses the Hudson River at river mile 43 between the Town of Stony Point and the Village of Buchanan, bisects the former Indian Point amusement park site in Buchanan, and continues on to the Towns of Cortlandt and Southeast, before heading into Connecticut.<sup>20</sup>

Soon after the passage of the Atomic Energy Act of 1954, the federal government authorized the Consolidated Edison Company to construct one of the first nuclear power reactors in the Nation on the east bank of the Hudson River at river mile 43 in the Village of Buchanan at the Indian Point park site.<sup>21</sup> At that

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<sup>19</sup> *In re United Gas Pipe Line Co., Texas Eastern Transmission Corp., and Algonquin Gas Transmission Corp.*, 10 F.P.C. 35, 1951 FPC LEXIS 3 at \* 72-74 (March 27, 1951).

<sup>20</sup> The Algonquin pipeline's Hudson River crossing includes three separate pipes: two 24-inch-diameter pipelines and one 30-inch-diameter pipeline. FERC DEIS at 3-18.

<sup>21</sup> 21 Fed. Reg. 3,085 (May 9, 1956) (Indian Point Unit 1).

time, the federal government did not have siting regulations or restrictions for nuclear reactors – to address site-specific issues such as nearby hazards, seismicity, sabotage, and population risks. One site-specific factor at Indian Point is the three Algonquin gas pipelines, which cross the Hudson River near the nuclear reactor and continue eastward under the site. In the 1960s, the Atomic Energy Commission authorized Con Edison to construct two additional nuclear reactors at the same site, one of which was located even closer to the Algonquin pipelines.<sup>22</sup> Although the federal government initially told “host” communities that radioactive spent fuel waste would be promptly removed from reactor sites,<sup>23</sup> the Nuclear Regulatory Commission later authorized the spent fuel pools at Indian Point to store five times more spent nuclear fuel than they were designed for.<sup>24</sup> Today, the two spent fuel pools there each hold almost four decades worth of spent fuel.

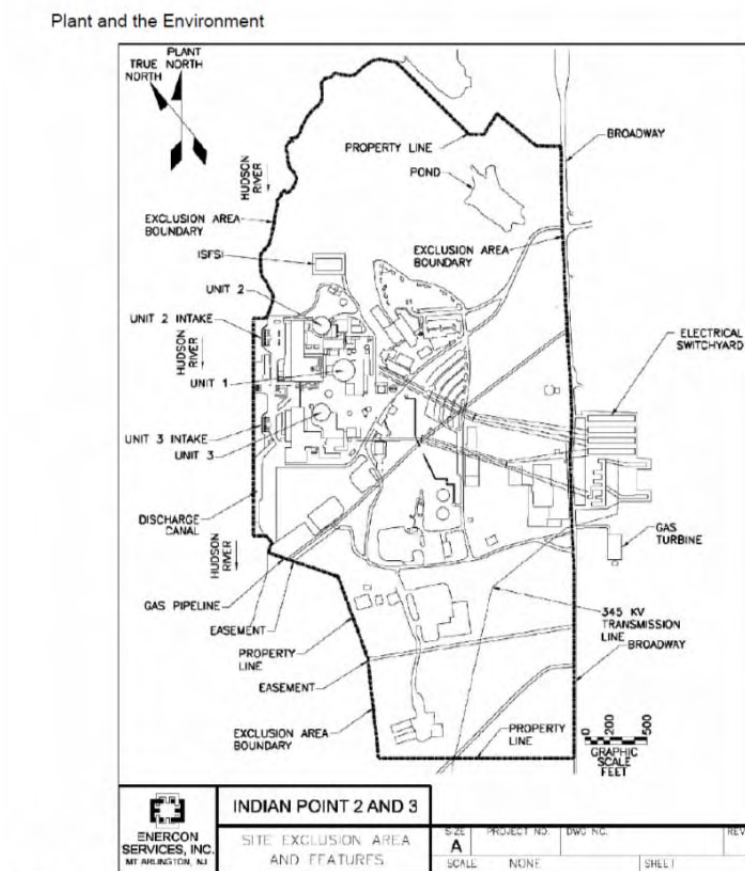
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<sup>22</sup> 31 Fed. Reg. 13,616-17 (Oct. 21, 1966) (Indian Point Unit 2); 34 Fed. Reg. 13,437 (Aug. 20, 1969) (Indian Point Unit 3).

<sup>23</sup> See, e.g., *Vermont Yankee Nuclear Power Station Final Environmental Impact Statement*, U.S. Atomic Energy Commission, at 93-94, ML061880207 (July 1972) (irradiated fuel elements will be shipped after minimum 90-day cooling period); *Prairie Island Final Environmental Statement*, U.S. Atomic Energy Commission, at 192, ML081840311 (May 1973) (spent nuclear fuel elements will be shipped to Nuclear Fuel Services Preprocessing Plant at West Valley, NY); *Final Environmental Statement for Indian Point, Unit 2*, Volume I, U.S. Atomic Energy Commission, at 257, 258, 298, ML072390276 (Sept. 1972) (approximately 35 truckloads of irradiated fuel per year will be transported to Midwest Fuel Recovery Plant in Morris, IL); *Final Environmental Statement for Indian Point, Unit 3*, Volume I, U.S. Nuclear Regulatory Commission, NUREG-75/002, at 412, ML072390284 (Feb. 1975) (irradiated fuel could be transported to the Allied-Gulf Nuclear Services Plant in Barnwell, SC); see also Blue Ribbon Commission on America’s Nuclear Future, Transportation and Storage Committee, Draft Report to the Full Commission, at 2 (“*Storage Committee Report*”)(May 31, 2011) (“These pools were not intended or designed for permanent storage; the assumption was that spent fuel assemblies would spend a few years immersed in the pools before being transferred out for reprocessing or final disposition.”).

<sup>24</sup> See Consolidated Edison, Final Design Report for Reracking the Indian Point Unit No. 2 Spent Fuel Pool, at 1, ML100200292 (May 1980); Consolidated Edison, Supplemental Spent Fuel

This diagram depicts the relative location of the Algonquin pipeline within the Indian Point site.



1 Source: Entergy 2007a

2 Figure 2-3. IP2 and IP3 property boundaries and environs

Safety Analysis, at 3-1, ML100350310 (Nov. 1985); and Consolidated Edison, Indian Point Unit 2 Spent Fuel Pool Increased Storage Capacity Licensing Report, at 1-2, ML100200114 (June 1989) and USAEC, Safety Evaluation Report by the Directorate of Licensing U.S. AEC In the Matter of Consolidated Edison Co. of New York, Inc. Indian Point Nuclear Generating Unit No. 3, at 4-1, 9-2, ML072260465 (Sept. 21, 1973); USNRC, Indian Point, Unit 3, Amendment 13, Authorizing Modifications to the Spent Fuel Pool, Increasing Capacity from 264 to 840 Fuel Assemblies, attached to Letter from A. Schwencer, NRC to New York State Power Authority, ML003778668 (Mar. 22, 1978); and USNRC, Indian Point, Unit 3, Amendment 90, Allowing for the Expansion of the Spent Fuel Pool Storage Capacity, attached to Letter from Joseph Neighbors, NRC to New York Power Authority, ML003778816 (Oct. 12, 1989).

### Need for Precise Terminology and Removal of Vague Terms

The DEIS uses vague and imprecise terms to discuss the diverse operations, systems, and structures at the Indian Point site. Such imprecise terminology makes it difficult for the public and decision makers to understand the EIS and frustrates NEPA's objectives. For example, the DEIS refers to a collection of power generation, radioactive waste storage, and transmission facilities located in the Village of Buchanan as the "Indian Point Energy Center" or "IPEC." *See, e.g.*, xv, 4-154 – 4-155. However, there is no such federally-licensed entity as the "Indian Point Energy Center." Under the licensing provisions of the federal Atomic Energy Act, the federal government officially refers to the various facilities by the names that appear on their operating licenses and dockets, *i.e.*, Indian Point Unit 1 (AEC Docket 50-003), Indian Point Unit 2 (AEC Docket 50-247, DPR-26), Indian Point Unit 3 (NRC Docket 50-286), and Indian Point Entergy Nuclear Operations, Inc. (NRC Docket 72-051(dry cask spent fuel storage facility)).<sup>25</sup> In addition, the DEIS refers to "power plant structures" (4-154) and "generating facilities" (ES-8), but these terms are also vague and imprecise. In addition, to three nuclear power reactors, the site contains office buildings, security structures for certain threats (10 C.F.R. Part 73), turbine buildings, buried pipes, as well electrical transmission

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<sup>25</sup> *See generally* NRC Information Digest 2014-2015, NUREG-1350 (Volume 26), Appendices A, C, P (Aug. 2014) ML14240A480.



lines and towers that link the facilities to the Buchanan substation and vice versa.<sup>26</sup>

The OAG requests that FERC revise the DEIS to reflect the reality of the specific infrastructure and improvements on the Indian Point site. Accordingly, the DEIS should use the term “Indian Point site,” “Indian Point property,” or use the precise terms of the specific system, structure, operation, or licensed facility at issue (*e.g.*, Indian Point Unit 3 spent fuel pool) to assist the public to better understand the interactions between the pipeline, the project, and their potential alternatives, and the diverse operations, systems, and structures related to nuclear energy and radioactive waste storage at the Indian Point site.

#### Closed-Cycle Cooling Facilities

As a result of the NEPA process, the DEIS states that FERC, Algonquin, and Entergy (the operator of the Indian Point facilities) have determined that “the proposed southern route for the AIM pipeline would not interfere with plans to construct closed-cycle cooling towers.” 4-155. This statement and finding should also be included in the Final EIS.

#### Site Hazards Analysis and Environmental Impacts

The DEIS states that “Algonquin is engaged in ongoing consultations with [Entergy]” regarding the impact of the proposed Algonquin Project on the safety and

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<sup>26</sup> This Office’s motion to intervene provided FERC with a description of various infrastructure improvements on the Indian Point site – including buried piping. *See* New York State Office of the Attorney General Motion to Intervene, at ¶ 6 (April 8, 2014). The Algonquin pipeline traverses the Indian Point site and comes in close proximity to the buried piping systems for the Indian Point facilities. The interaction of different piping systems can contribute to age-related degradation and corrosion of the piping systems. Transcript of Indian Point Evidentiary Hearing (“Tr.”) at 3708-13, 3715 (Dec. 11, 2012).

security of the various Indian Point facilities. Presumably, such consultations should and will involve the Nuclear Regulatory Commission. The N.Y. Attorney General understands that Entergy is undertaking a site hazards impact analysis concerning the pre-existing Algonquin pipeline and the proposed (southern) AIM pipeline, and the alternative (northern) AIM pipeline. ES-8. Until that site hazards analysis is completed and reviewed by NRC, the N.Y. Attorney General is unable to comment on the integrity of that assessment – and requests and reserves the opportunity to do so before the completion of the EIS and NEPA process. Also, in light of this pending analysis and review, NRC should consult with FERC and the EPA regional offices before the federal government completes the NEPA process.

Based on the wording of FERC's DEIS, it appears that site hazards analysis will focus on "*new* safety hazards" to Indian Point posed by the "proposed route." ES-8 (emphasis added). The implication is that the site hazards analysis and the NEPA analysis will only examine the preferred southern route and will not consider any hazards impacts posed by the alternative northern route. In addition, the statement implies that the site hazards analysis and the NEPA analysis will not take a hard look at the cumulative impacts and risks posed by the existing Algonquin pipeline, the alternative northern route, and the proposed southern route. The N.Y. Attorney General respectfully submits that excluding the

consideration of such hazards and impacts from cumulative and alternative impact analyses is inconsistent with NEPA and its implementing regulations.

Separate and apart from these concerns, the DEIS implies that the site hazard analysis is limited to the Indian Point “generating facilities” *i.e.*, the operating power reactors within Indian Point Unit 2 and Indian Point Unit 3. ES-8. FERC and other agencies should also examine the impact of the Algonquin pipeline, the alternative northern AIM route, and the proposed southern AIM route on the spent fuel pools, the turbine buildings, the piping systems, access and evacuation routes, the security area and security force, and the transmission lines that convey electrical power into and out of the Indian Point facilities. Although the Indian Point spent fuel pools do not generate electricity for the power grid, each contains almost 40-years-worth of densely-packed spent nuclear fuel. Both of these densely-packed operating spent fuel pools are located *outside* of the concrete domes around the generating power reactors. Given that the federal government authorized the interstate gas pipeline and nuclear power facilities to operate side-by-side in the Village of Buchanan, FERC should undertake a severe accident mitigation alternatives analysis to identify measures to mitigate the environmental impacts posed by their close proximity to one another. *See* 10 C.F.R. § 51.53(c)(3)(ii)(L); *Limerick Ecology Action, Inc. v. NRC*, (3d Cir. 1989) (holding that NEPA required NRC to conduct a severe accident mitigation alternatives analysis when issuing a license).

### Alternatives Analysis

The potential for interaction between nuclear power reactors, radioactive waste storage facilities, physical security systems, and electrical power lines on the one hand and large-diameter natural gas pipelines on the other is the unfortunate result of previous federal siting decisions. One alternative that could mitigate the potential hazardous interactions between the Indian Point facilities and the Algonquin pipelines is the re-routing of the three existing Algonquin pipelines to the proposed southern route for the AIM pipeline. This alternative would move the pipelines away from the Indian Point reactors, spent fuel storage facilities, buried and underground pipes, security area/ structures, and electrical power lines – and would also remove any argument that the existing gas lines impede the construction of closed-cycle cooling systems for Indian Point Unit 3. *See* 3-20, Figure 3.5.1-1. Such an alternative should also avoid schools, hospitals, and community centers, as well as fire, emergency services, and police stations.

The EIS should contain a comparison of each of these pipeline alternatives focusing on how close they each approach the various Indian Point structures and systems. Only through such a direct comparison can the public and the agency decision makers weigh the direct effects, the indirect effects, the alternatives, and the potential mitigation measures. 40 C.F.R. §§ 1502.14, 1502.16. At present, the DEIS contains an incomplete and artificially narrow discussion of the relationship

of only the proposed southern pipeline and its relationship to undefined “power plant structures” (4-154) or “generating facilities” (ES-8).

### CONCLUSION

In conclusion, the N.Y. Attorney General requests that FERC address in the FEIS the serious deficiencies in the DEIS identified above to mitigate the risks of adverse impacts posed by the Project to the New York City Watershed, climate change, and public safety and the environment given the interaction of the Algonquin pipeline and the Algonquin Project with the Indian Point nuclear facilities.

Respectfully submitted,

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**TECHNICAL APPENDIX CONCERNING**  
**STORMWATER POLLUTION**

By Donald Lake, P.E.

**Introduction**

The following documents were reviewed:

1. 01-Volume ii-A Resource Reports dated April 2014
2. Algonquin Incremental Market (AIM) Project New York Storm Water Pollution Prevention Plan (SWPPP), dated August 2014, prepared by TRC Environmental Corporation; Sections 1-7.
3. Appendix C of the AIM Project NY SWPPP entitled “Erosion and Sediment Control Plan and Spill Prevention Control and Countermeasure Plan” dated August 2014.
4. Part of Appendix E (that corresponds to the NYC Watershed) of the AIM Project NY SWPPP, Construction Drawings S7-E-8002 through S7-E-8010, Rev. B, dated 6/30/14, prepared by Spectra Energy Partners, detailing plan views and profiles of the AIM project, with profiles that locate site specific erosion and sediment control practices along the pipeline route within the New York City Watershed.
5. Part of Appendix F (that corresponds to the NYC Watershed) of the AIM Project NY SWPPP entitled “The Stormwater Pollution Prevention Plan for the Southeast Station”, Putnam County, dated August 2014, by Michael Baker, White Plains, New York.
6. A seven sheet set of Construction Drawings titled, “Southeast Compressor Station, Stormwater Pollution Prevention Plan”. One sheet, the topographic survey of existing site conditions, prepared by LRC Consultants, is dated 1/15/14. The remaining six sheets, prepared by Michael Baker, are neither dated nor numbered but are referenced on the cover sheet.
7. AIM Erosion and Sedimentation Control Plan dated October 8, 2013, prepared by Environmental Construction Permitting.

## **Technical Comments**

1. No more than 5 acres of soil can be disturbed during normal construction activities and for linear projects tributary to AA or AA-s waters no more than 2 acres of disturbance are allowed on slopes greater than 25%, without receiving written authorization from the New York State Department of Environmental Conservation as required in the General Permit GP-0-10-00, Part 1.D.7.b and Part II.C.3. The documentation reviewed did not define the specific incremental phases of the project. An example of what we are seeking is: “Phase 1 will be from Station 2+00 extending 500 feet to Station 7+00”, so that a determination can be made on how much soil would be exposed at one time.
  
2. Information concerning interceptor dikes (section 6.1), qualified inspectors (section 6.1) and stabilization criteria (section 6.3.4) presented in the main body of the AIM Project NY SWPPP, dated August 2014, excluding Appendix C, is correct. Appendix C of the AIM Project NY SWPPP entitled “Erosion and Sedimentation Control Plan” contradicts this information. The following sections of Appendix C need to be revised to agree with the information presented in the main body of the AIM Project NY SWPPP: section 3.6.1.1 and Figure 12 (ES-0012) for the interceptor dikes, section

2.0 for the qualified inspector, and section 8.1.3 for the stabilization criteria.

In addition, Appendix F of the AIM Project NY SWPPP titled “The Stormwater Pollution Prevention Plan for the Southeast Station”, Putnam County, and dated August 2014 also contradicts the information provided in the main body of the AIM Project NY SWPPP. The following sections of Appendix F need to be revised to agree with the information presented in the main body of the AIM Project NY SWPPP: section 4.5 for the qualified inspector and section 4.3 for the stabilization criteria. In addition, section 5.3.1 of Appendix F needs to reference New York General Permit GP-0-10-001 as the source for site compliance inspections.

3. Appendix F, which is the Southeast Station SWPPP, needs to expand sections 3.6.0 and 4.1.3 to remediate all compacted soils caused by construction activities. Currently, the SWPPP only addresses soil restoration in agricultural areas. The SWPPP should be revised to remediate other areas of compacted soils caused by the project in the NYC Watershed, such as lawns in residential locations.
4. Section 3.6.3.1.a of Appendix C of the AIM Project NY SWPPP concerning mulch needs to be amended to require stabilization of disturbed soil



within 14 days instead of the stated 20 days to meet the requirements of the NY Erosion and Sediment Control Standards (page 2.3, iii, 4) dated August 2005.

5. The erosion and sediment control plan view construction drawing does not identify where the concrete washout facility will be located on site. This omission needs to be addressed. In addition, the washout facility specifications need to be added to the Details-1 sheet of the construction drawings set.
6. Construction drawing, Details-2, contains specific details for a temporary sediment basin, but no basin is shown on the erosion and sediment control plan view. All sediment basin locations need to be shown on the plan.
7. The temporary sediment basin inspection requirements are missing from the construction drawing for Construction Sequence, Inspection and Operation and Maintenance. These must be added.
8. All silt fence shown on the erosion and sediment control plan view that is not installed on a topographic contour line should be removed.

9. The rock riprap outlet detail shown on construction drawing Details-1, needs to show the specific dimensions required for the two rock outlets illustrated on the erosion and sediment control plan view.
  
10. An infiltration basin is one of two stormwater management practices selected for use on this project. However, no construction details are presented in the SWPPP nor on the drawings for this use. These specifications must be provided.
  
11. To determine whether an infiltration practice is feasible, the soil at the bottom elevation of the proposed practice must be tested. There are no such test results in the SWPPP. This omission must be addressed.
  
12. Two infiltration rates are provided for the basin in the SWPPP documents. In the HydroCAD routings, the infiltration rate for the basin is reported as 2.0 inches per hour. Whereas, the infiltration rate for the basin is reported as 3.88 inches per hour on the Infiltration Basin Worksheet in appendix C. In addition, an infiltration rate of 0.4 inches per hour is reported for the dry swale on page 9 of the HydroCAD routing for the proposed drainage. These infiltration practices are all within the Stockbridge-Rock Complex, as defined by the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS)

soil survey. This survey also classifies this soil as belonging to Hydrologic Soil Group “C”. This soil typically has an infiltration rate ranging from 0.06 inches per hour to 0.57 inches per hour (Southeast Station SWPPP, see Appendix D within Appendix F). There appears to be extreme contradictions between the values used to define the infiltration rate for the basin and the USDA-NRCS soil survey. Therefore, site specific infiltration testing must be done to assure the feasibility of the proposed infiltration practice.

13. The infiltration basin shown on the erosion and sediment control plan view does not meet the criteria for an approved infiltration basin (I-2), shown on page 6-33 of the New York State Stormwater Management Design Manual and described on pages 6-35 through 6-40. Lacking are pre-treatment, soil permeability testing, and construction details for elevation and overflow outlets. For example, the basin shown on the erosion and sediment control plan has a 4% bottom grade, which does not comply with the requirement that the surface of an infiltration practice be level to insure even stormwater distribution into the ground. Proper design details must be provided.

14. The proposed construction drawings on sheet Details-1, show a grassed channel that is mislabeled as a “Dry Swale”. The criteria for a Dry Swale

(O-1) is presented on page 6-60 in the NYS Stormwater Management Design Manual, 2010, and described on pages 6-62 through 6-64. If this vegetated channel is proposed for use as an approved water quality practice in New York, it must be designed in accordance with the required criteria.

15. The hydrologic analysis presented in Appendix G of the AIM Project NY SWPPP Appendix F, entitled “The Stormwater Pollution Prevention Plan for the Southeast Station”, Putnam County, dated August 2014 uses outdated TP-40 rainfall values and Soil Conservation Service (SCS) Type 3 rainfall distribution values. Updated hydrologic data from the Northeast Regional Climate Center (NRCC) should be used, along with the corresponding rainfall distributions, for each individual storm (this data can be imported directly into HydroCAD). The NRCC value for the 1 year rainfall event is now 2.8 inches instead of the TP-40 value of 2.7 inches, used in the HydroCAD routings. These analyses should be re-done using the updated NRCC hydrologic data.

16. The water quality treatment volume (WQv) calculations in Appendix C within Appendix F for the Southeast Station SWPPP are incorrect. The 1 year rainfall values need to be converted to runoff values using the TR-55 Curve Number methods, such as that used in the HydroCAD routing. The

Simple Method formula shown in Chapter 4 of the NYS Stormwater Management Design Manual (2010) is only used for the 90<sup>th</sup> percentile rainfall values, which are not applicable for projects within the New York City drinking water supply watershed.

17. The WQ<sub>v</sub> calculations and the HydroCAD routing contain a storm labeled “DEP 1 year, 24 hour duration Storm” with a “SCS Type 2” rainfall distribution and value of 3.2 inches. Based on discussions with NYSDEC and NYCDEP staff, this storm does not exist in New York. A WQ<sub>v</sub> rainfall value of 2.8 inches should be used for the WQ<sub>v</sub> calculations.
18. The time of concentration ( $T_c$ ) is defined as the time required for a drop of water to travel from the most hydrologically remote point in a subcatchment to the outlet. All  $T_c$  values used in the HydroCAD routings are direct entry values of 6 minutes. This means there were no calculations done to support these numbers. These  $T_c$  values must be calculated for their respective drainage areas and the HydroCAD model re-run.
19. A full Quality Assurance/Quality Control review should be performed on all documentation associated with this project to confirm consistency with all statements and technical work.

EXHIBIT 8:  
Spectra Responses and Mailer to West Roxbury  
Residents

**West Roxbury Saves Energy – Q&A’s  
Algonquin Gas Transmission’s Responses  
November 13, 2014**

Attached are the responses prepared by Algonquin Gas Transmission, LLC to the questions forwarded by West Roxbury Saves Energy (the “WRSE”) from the October 8<sup>th</sup> community meeting. The WRSE’s questions were grouped together based on subject matter due to the overlapping nature of certain questions. Algonquin’s responses then address each subject area in order to facilitate review.

## Safety

**4. What safety precautions will be taken to avoid an explosion at any point in the line? 5. What activities and events are likely to cause an explosion along the line or at the M&R Station? What is Spectra doing to prevent such events from occurring? 6. Knowing that promising with 100% certainty that no event will occur that results in a major explosion is not possible, what percent are you able to promise? What is your SLO (service level objective) for safety? 7. What kind of pressure can the pipes withstand before they are compromised and at risk for an explosion or other catastrophe? 13. On page 5-14 of the DEIS the mention of a "slight increase in risk to the nearby public" of the new pipeline is stated. What are these "slight" risks? 16. Describe what occurs when a 750 psi pipe has an explosion.**

- **General Pipeline Safety Information**

Since pipeline safety is a concern raised in many of these questions, the following is information about interstate natural gas transmission pipelines and how they are safely designed, constructed, operated and maintained. This includes the pipeline system operated by Algonquin Gas Transmission, LLC (“Algonquin”). It is also important to note that the Draft Environmental Impact Statement (the “DEIS”) which the Federal Energy Regulatory Commission (“FERC”) issued on August 6<sup>th</sup> concluded that Algonquin’s implementation of the safety measures which are reflected in its filing and reviewed within the DEIS would ensure public safety and the integrity of its proposed facilities. FERC also noted that Algonquin’s facilities will be designed, constructed, operated and maintained in accordance with or to exceed the applicable federal regulations which are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Accordingly, FERC determined that by designing its project in accordance with the applicable standards, Algonquin’s West Roxbury Lateral Project would not result in significant increased public safety risk. FERC’s DEIS also noted that its regulations require that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facilities for which a Certificate is requested in accordance with federal safety standards and plans for maintenance and inspection. FERC also stated that natural gas transmission pipelines continue to be a safe, reliable means of energy transportation. Please also



refer to the copy of Resource Report 11 concerning reliability and safety which accompanied Algonquin's FERC application and which is attached to these responses.

The pipeline is designed, constructed and operated to last virtually forever with the proper ongoing maintenance practices. Natural gas transmission pipelines have been operating safely in New England for over 60 years.

The pipeline is built of high strength carbon steel that is coated with a corrosion resistant, non-conductive, inert material with high quality control during manufacturing. The pipe is coated with corrosion resistance coatings. During construction, each joint of pipeline is welded and each weld is x-rayed to verify its integrity. Additionally, the pipeline is hydrostatically tested at high pressure before being placed into service to ensure its structural integrity prior to being placed into service. During hydrostatic testing, the pipeline is filled with water and pressurized to at least 150 percent of the maximum allowable operating pressure. That pressure is held for a minimum of 8 hours to confirm the integrity of the pipeline. The pipeline is also cathodically protected to protect it from the effects of corrosion.

The pipeline will consist of high strength Grade X-52 steel with welded connections. The pipe will be installed within an excavation and be enveloped in an engineered backfill (e.g., compacted sand or cementitious fill (a.k.a., flowable fill)) extending a minimum of 8 inches below the pipe and a minimum of 6 inches on both sides and the top of the pipe. The engineered backfill is designed to support the pipe evenly, and protect the pipe's corrosion-protection coating.

Once the pipeline is installed at least three feet beneath the surface and the surface is restored to its pre-existing contours, Algonquin installs above-ground or surface markers to indicate the location of the buried pipeline. These markers are placed in line-of-sight intervals as the buried pipeline crosses private and public property; they are also installed at each and every road crossing. Markers are designed to enhance public safety and alert anyone planning any excavation activities of the pipeline's presence in the area. The markers contain a decal which indicates Algonquin's name and the telephone number for assistance.

The piping and associated facilities are also required to undergo quality control and testing during manufacturing and construction. Algonquin's quality assurance/quality control includes having its inspectors at the manufacturing facilities and on-site during all welding, coating, and backfill operations. All welds for the pipeline are required to be tested (non-destructively) by a third-party radiographic inspection company.

An important key to public safety is leak prevention and detection. Algonquin personnel regularly perform visual inspections of its pipeline to identify potential problems. These inspections are done on foot, by vehicle and air. Aerial inspections of the entire pipeline route are done on a regular basis. The rights-of-way are routinely viewed by vehicles at road crossings. An on-the-ground inspection is conducted annually by walking the entire pipeline route.

Government statistics cite "outside forces" as the primary cause for reportable incidents on natural gas pipelines, with "human error" in equipment usage comprising 75 percent of these events. Most of these cases involve excavating without first contacting a gas company to mark the location of the pipeline. The reference in the DEIS issued by the FERC in August to a slight increase in risk primarily involves third party damage. For this reason, Algonquin adheres to strict guidelines regulating activities within close vicinity of its facilities. For the protection of the public and the pipeline, Algonquin must approve any physical work in such vicinity. Algonquin supports third party awareness by promoting pipeline safety and public awareness. This is accomplished by community liaison meetings and mailings throughout the areas where the pipeline is located.

Algonquin is an active member and advocate of the "Dig Safe" program in Massachusetts. Through Dig Safe, Algonquin is informed of planned excavations, which allows it to monitor activities around the right-of-way to protect the pipeline. Before any type of excavation work may be done within close vicinity of its facilities, Dig Safe and Algonquin must be contacted. Algonquin will then mark the location of its facilities and will require that an inspector be present during the excavation to monitor the work. In most instances, Algonquin provides that inspection at no cost to the contractor or landowner.

Once the pipeline is in-service, Algonquin's Gas Control Center electronically monitors the operations of the pipeline. The Gas Control Center is staffed 24 hours a day, 365 days a year and uses a state of the art computerized gas monitoring system ("SCADA System") to read pressures on a continuous basis along the system every 60 seconds or less.

Safety is Algonquin's primary focus. Steel pipelines are designed, constructed and operated to avoid catastrophic events. In the course of construction and operation of the pipeline, Algonquin works closely with local communities and public safety officials through an ongoing liaison program. In the unlikely event of an emergency, Algonquin operating personnel who are headquartered in Westwood coordinate their response with the local public safety officials as noted within FERC's DEIS.

Company personnel are responsible for the pipeline in the event of an emergency. Local public safety officials (fire, police) would be responsible for protecting the public during an emergency situation and make the determination of the necessary emergency steps to take, notifying or evacuating residents if necessary. Company personnel meet with local safety officials on a regular basis in conjunction with its liaison program to ensure that the public's safety is maintained and its response activities are coordinated.

**9.** Where have you successfully built and maintained a pipeline of similar length and pressure in a similar environment (M&R Station so close or closer to an active quarry that is also in such a densely settled neighborhood)? Where else is there an active quarry in the middle of a major city that also has one of your 750 psi pipelines running through it? **14.** Is it possible to relocate the M&R Station to a place that is not in proximity to the quarry? **23.** Why did Spectra not consider alternative locations for this 5-mile spur that did not include a densely populated residential area and an active quarry across from the M&R Station? **24.** One speaker stated that his home will be just a few hundred feet from the proposed M&R Station. Please ask the CEO of Spectra if he would want his children living in that same proximity to the M&R Station.

- **West Roxbury Crushed Stone Quarry**

The issue of safety was initially raised by public officials, residents and local community groups in the fall of 2013. The core issue is whether Algonquin's facilities can operate safely in close proximity to an active quarry. In order to address those concerns, Algonquin commissioned a detailed engineering study by GZA GeoEnvironmental, Inc. ("GZA") to evaluate the possible impacts from the West Roxbury Crushed Stone Quarry's (the "Quarry") current and potential future blasting operations on the construction and operation of the West Roxbury Lateral pipeline and the meter and regulator station. The GZA study was completed and filed with FERC on March 31, 2014 for its review and consideration. Critically, the DEIS issued by FERC provides an in-depth analysis of the GZA study and the DEIS did not fault the conclusions within the study which are summarized below.

The GZA study took an extremely conservative approach by assuming that the Quarry was allowed to blast within five (5) feet of the sidewalk along Grove Street in West Roxbury. Such a location would place the Quarry's blasting at the closest possible point to the facilities associated with Algonquin's West Roxbury Lateral Project. In preparing its report as submitted to FERC, GZA concluded as follows:

- The current or future blasting operations at the Quarry will not affect the safe operation and integrity of Algonquin's facilities.

- Despite the conservative approach followed concerning the proximity of the Quarry's blasting, ground vibrations from future blasting at the Quarry will not damage the proposed pipeline and the pipeline had a minimum factor of safety of ten (10) to twenty (20) times its design strength.
- The blasting at the Quarry will not be disruptive or damaging to the meter and regulator station at the intersection of Grove and Centre Streets due in part to the station's design and because the meter station will be located even further away from the Quarry than the pipeline, with the impact from blasting dissipating over distance.
- The likelihood that a piece of fly-rock from the Quarry might hit and damage the meter and regulator station is calculated to be in the range of 10,000,000 to 1, and the possibility that such a direct hit might actually cause a release of gas in any amount is even less likely.

Subsequent to the preparation of the GZA report which assumed that blasting occurred within five feet of the sidewalk, State Senator Michael Rush successfully passed legislation which restricts the ability of the Quarry to blast within five hundred (500) feet of Algonquin's facilities absent state approval and a specific finding by the state that such blasting is completely safe. It is also important to recognize that blasting at the Quarry is performed under a permit issued by the Fire Department for the City of Boston which, as FERC's DEIS notes, specifies a limit on the allowable blast-induced vibration magnitude at any abutting property of 1.0 inch per second.

Algonquin would also note that two existing gas pipelines and a waterline have been operating within Grove and Centre Streets, adjacent to the Quarry, for several decades with no appreciable effect on the community's safety or the Quarry's operation.

**1. If an explosion happened along any point in the five-mile pipeline, what would the blast radius be? How many residents and homes would be affected by the blast and the ensuing fires? 2. If an explosion happened at the M&R Station, what would the blast radius be? How many residents and homes would be affected by the blast and the ensuing fires?**

Safety is Algonquin's top priority in the construction, operation and maintenance of its facilities. According to National Transportation Safety Board statistics, the interstate natural gas pipeline system is the safest energy delivery system in the nation. The pipeline and the meter and regulator station are designed, constructed and operated to meet or exceed the safety requirements exclusively governed by the U.S. Department of Transportation ("U.S. DOT").

It is important to note that in the Draft Environmental Impact Statement issued on August 6<sup>th</sup>, the FERC concluded that Algonquin's implementation of the safety measures which are reflected in its filing would ensure public safety and the integrity of its proposed facilities.

The U.S. DOT is responsible for establishing the requirements and oversight of the operation and maintenance of interstate natural gas pipelines. In that capacity, regional U.S. DOT representatives perform periodic inspections of Algonquin as the pipeline operator by reviewing its records, operating and maintenance procedures and facilities to ensure that Algonquin's operating practices meet or exceed U.S. DOT regulations.

A pipeline rupture or similar occurrence at the meter and regulator station is highly unlikely. In fact, the U.S. DOT design and operating criteria are developed specifically to avoid those types of events. Algonquin and the pipeline industry in general make every effort to avoid and prevent such occurrences. Algonquin works with local authorities and the Dig Safe Program to educate third parties about the necessary communications when a contractor needs to perform construction on and around the pipeline right-of-way or in the general vicinity of the meter and regulator station. Additional detail concerning the strong focus which Algonquin brings to the construction, operation and maintenance of its facilities was included within Resource Report 11 as filed with Algonquin's application at the FERC; a copy of Resource Report 11 is included as an attachment to these responses.

Algonquin has safely operated pipelines in Massachusetts and the region for over sixty years. The safe operation of the Algonquin pipeline system is due to procedures and specifications that incorporate multiple layers of safety into the design, materials procurement, construction and operation as described more fully in the *General Pipeline Safety Information* section included with these responses.

**11. What materials will be used for the M&R Station? Are they explosion-proof?**

The meter and regulator (“M&R”) Station will consist of a metering building, two exterior gas heaters, a regulating building, and above-ground and underground gas pipelines. The M&R Station site will be enclosed in a security fence. The two buildings will be engineered, single-level structures with minimum 4-inch thick reinforced concrete walls and a 4- to 6-inch thick reinforced concrete roof. The exterior above-ground structures, pipes, and supports will be steel construction. The buildings and heaters will be supported on concrete foundations. All sensitive M&R Station piping, instruments and components will be located inside of the reinforced concrete buildings.



**3. In the event of an emergency, how long would it take Spectra and/or National Grid to turn off the gas to the line and to the M&R Station to avoid further damage and lost of life? (It took PG&E approximately 1.5 to 2 hours in the San Bruno blast.) 12. Where will the shut-off valves for the M&R Station be located? 20. An elementary school is located less than a mile away from the proposed high-pressure pipeline. Explain what precautions will be taken to protect these children in the event of a leak or explosion at the pipeline.**

Remotely operated valves are installed along the pipeline to control and shut off the flow of gas. The spacing of these valves is regulated by the U.S. Department of Transportation (“U.S. DOT”). As required by U.S. DOT standards, mainline valve sites are located at specified intervals depending upon the population density. Algonquin plans to install mainline valves at the beginning of the route in Westwood and at the M&R Station in West Roxbury. A typical valve site is comprised of an area that is enclosed by a fence measuring approximately 50 feet by 50 feet surrounding an aboveground valve and piping. In addition, an additional shut-off valve will be located at the interconnection between Algonquin’s pipeline and Grid’s facilities in West Roxbury.

With the remote operating capability, our Gas Control Center can immediately begin a safe shutdown and isolation of a section of pipeline in the event of an emergency. The remotely operated valves close within 60 to 90 seconds.

As noted elsewhere, company personnel are responsible for the pipeline in the event of an emergency. Local public safety officials (i.e., fire, police) would be responsible for protecting the public, including nearby schools, during any emergency situation. Company personnel meet with local safety officials on a regular basis in conjunction with its liaison program to ensure that the public’s safety is maintained and response activities are coordinated.

As noted previously, the DEIS which FERC issued on August 6<sup>th</sup> concluded that Algonquin’s implementation of the safety measures which are reflected in its filing would ensure public safety and the integrity of its proposed facilities.

## Project Need

**21. Has there been a cost-benefit analysis done on the supply of gas through a new line vs. fixing the current leaks in the system? 25. In light of all the leaks in the existing gas pipes, can the added pressure from the high-pressure line be handled safely? 26. Is this gas going into a liquefied station? Can Spectra promise us it will not be LNG? 27. Is the sole purpose of the West Roxbury Lateral at full capacity to deliver 30,000 decatherms to National Grid or is Spectra anticipating other uses? 28. Is there any reason Spectra could not bring the extra gas in through a lower pressure line? 29. How many communities will be served by the 750 psi line coming into West Roxbury?**

The West Roxbury Lateral Project (the “Project”) is being developed by Algonquin in order to provide additional pipeline capacity to National Grid (“Grid”) so that Grid can meet its immediate and planned load growth demands within the West Roxbury area and the City of Boston. In fact, the agreement between Algonquin and Grid which forms the basis for Algonquin’s Project was subject to review and approval by the Massachusetts Department of Public Utilities (the “Department”). Based on a filing made by Grid with the Department in September 2013, the Department found that the contract between Algonquin and Grid was in the public interest and was necessary to enable Grid to meet its forecasted demand for its customers in the West Roxbury/Boston area. Both the Attorney General and the Massachusetts Department of Energy Resources had recommended approval of the contract between Algonquin and Grid as necessary for Grid to be able to meet its forecasted demand.

In its filing with the Department, Grid noted that Algonquin’s Project would be a dedicated lateral to serve Grid’s distribution system. Grid maintained that the primary reasons why the Project would be beneficial and was needed for Grid’s distribution system and its customers was to improve system reliability, to facilitate upgrades to the local distribution system in West Roxbury, and to support long-term growth. Specifically, Grid noted the following:

- Ninety-five percent of the homes and businesses in West Roxbury use natural gas and Algonquin's West Roxbury Lateral will provide significant enhancements to the reliability of supply into this portion of the Grid service territory.
- Its gas system could be modernized and replaced with higher pressure (60 psig) plastic gas mains, which would be more efficient and cost effective than replacing the existing low pressure system. That modernization program has already been initiated by Grid in anticipation of the additional supply to be provided by the Project.
- New gas customers are driving the need for additional supply even with ongoing energy efficiency gains. For example, Grid estimates that there could be nearly 146,000 potential new customers in the Boston area that could be supported by the completion of Algonquin's Project, with a corresponding benefit for the entire City due to cleaner air which will result from the lowering of greenhouse gas emissions.

The West Roxbury Lateral also helps Grid resolve gas distribution system reliability issues in West Roxbury. For example, Grid has estimated that 15 percent of peak day supplies are delivered from its Commercial Point facility in Dorchester. Absent the West Roxbury Lateral being in-service, an outage at that facility would result in wide spread system outages. Similarly, Grid has noted that 25 percent of its peak day supplies are delivered into Boston on Algonquin's J-lateral. In the event of an outage on the J-lateral on a cold day (i.e., 15 degrees), Grid has estimated that tens of thousands of its customers would lose service without the West Roxbury Lateral.

There is no intent to use the gas supplied through the Project for LNG production or export. The DEIS issued by FERC on August 6<sup>th</sup> addressed this issue and concluded that the Project is not designed for the export of natural gas.

## Alternatives Discussion

**14. Is it possible to relocate the M&R Station to a place that is not in proximity to the quarry? 19. Explain why this route for the West Roxbury Lateral is the best route available for this incoming pipeline. 23. Why did Spectra not consider alternative locations for this 5-mile spur that did not include a densely populated residential area and an active quarry across from the M&R Station?**

National Grid (“Grid”) requested a new delivery point located in the West Roxbury section of the City of Boston to connect with, enhance and reinforce system reliability during outage situations and support long-term growth in the Boston region. The site for the new delivery point cannot be reached by the existing Algonquin pipeline system. As a result, it is necessary to install approximately 4.9 miles of new lateral pipeline and a new meter and regulator (“M&R”) Station to provide Grid with the service it has requested.

Algonquin initially identified another route for the West Roxbury Lateral which is identified in its FERC filing as the West Roxbury Lateral Alternative. The West Roxbury Lateral Alternative route deviated from the currently proposed route for the West Roxbury Lateral on Washington Street in the Town of Dedham. The alternate route followed Incinerator Road off of Washington Street and existing parking lots and driveways for a variety of commercial properties for approximately 0.7 miles before paralleling Providence Highway and crossing into West Roxbury. The alternative route then went cross country and intersected with Belle Avenue. At this point, the route followed various residential roadways including Belle Avenue, Baker Street, Spring Street and Alaric Street before intersecting with the proposed alignment.

Significant concern was raised at that time about the alternative route primarily because of its proximity to residential structures and the surrounding neighborhoods, particularly in the vicinity of Belle Avenue. For example, the alternative alignment would have crossed through the backyards of several residential homes, impacted a number of residential streets, and caused significant disruption to the surrounding neighborhood. Construction in these areas would also have required complete closure of these residential streets. In addition, if this alternative route

were to be used, the required M&R Station would have to be located on private property at the intersection of Centre Street and Alaric Street, which does not present any favorable land options for locating the M&R Station. For example, one option would have required the purchase and demolition of a residential property at the corner of Centre and Alaric Streets.

In addition, after detailed engineering review, it was determined that finding a location for the proposed M&R Station along the West Roxbury Lateral Alternative would have resulted in greater impacts due to the presence of residential homes, school athletic facilities and traffic congestion as compared to the proposed M&R Station site at the intersection of Grove and Centre Streets on the preferred route. The proposed M&R Station site is located at the intersection of Centre Street and Grove Street on a 4.11-acre undeveloped property. This provides a more feasible option for siting the new M&R Station in West Roxbury. In addition, this site was superior in terms of allowing the Project to help screen the M&R Station from view due to the existing growth on that parcel.

A detailed analysis of the West Roxbury Lateral Alternative Route was performed by the Federal Energy Regulatory Commission in conjunction with its preparation of its DEIS. Based on that review, the DEIS concluded that the alternative route was not preferable to or otherwise provided a significant advantage over the proposed route. Moreover, the DEIS also discussed the proposed location of the M&R Station in West Roxbury and compared it with the possible location at the intersection of Centre and Alaric Streets. The DEIS determined that the alternative location was not technically feasible or environmentally preferable when compared to the proposed site off of Grove Street. The DEIS also concluded that no other viable alternative sites had been identified for the M&R Station in West Roxbury.

In recent weeks, the Project has also been asked about the possibility of Algonquin's West Roxbury Lateral Project tying-in to the Grid system by traveling up the VFW Parkway and connecting on Rivermoor Street. Basically, a tie-in at Rivermoor Street would not support Grid's intermediate pressure system as the pipe infrastructure at Rivermoor is insufficient to provide the needed takeaway capacity or pressure support which Grid requires in order to serve its customers. In fact, an additional pipeline would still need to be installed from Rivermoor Street to the current interconnection with Grid near Temple and Centre Streets in order to

achieve the needed benefits. Thus, instead of one pipeline, the project would have two pipelines running through West Roxbury, and the overall length in Boston would increase by close to two miles. In contrast, the West Roxbury Lateral as presently configured meets Grid's requirements by interconnecting to Grid at Spring and Centre Streets.

In summary, the DEIS issued by FERC conducted an exhaustive review of alternative routes and concluded that none offered significant environmental advantages over the alignment proposed by the Project.

## Insurance

**10. If my neighbors and I lose our homes and/or our loved ones due to an explosion or any other issue anywhere along the pipeline or at the M&R Station, what kind of compensation will we receive? What does your insurance policy for this pipeline and M&R Station look like? 22. Are there provisions in place contractually when/if an explosion occurs on the West Roxbury Lateral?**

Algonquin has established an exemplary safety record in the operation of its pipeline system. In the unlikely event that an individual's property is damaged due to an incident, Algonquin would assume financial responsibility to keep the landowner whole and has adequate insurance available to cover such liabilities. After a full investigation of the incident, Algonquin may seek reimbursement from the party responsible for causing the incident under state law, as an insurance company would do in the event of an accident.

Algonquin will not be providing liability insurance coverage to each landowner along the proposed pipeline corridor. The pipeline will be designed, constructed and maintained in a very safe manner as governed by U.S. DOT. Algonquin will assume the initial financial responsibility to pay for damage to adjacent properties in the unlikely event there is a serious accident. Moreover, Algonquin will carry the appropriate amounts and types of insurance for a pipeline company consistent with similar companies in this industry.

## Truck Traffic Considerations

**15. Spectra has indicated (via Ray Porfilio at Community Meeting) that there will be jersey or other protective barriers around the M&R Station. Does Spectra have evidence to provide that shows that these barriers can and will stop large trucks barreling down that road? 18. Has Spectra done an impact study due to the increased truck traffic (from 150 now to 300 proposed, one truck every 7.5 minutes)?**

The issue of a vehicle losing control and potentially crossing into the parcel which will house the meter and regulator station was raised by the community in recent weeks. In response to that concern, Algonquin has worked with its design consultant and the decision has been made to add a wood highway guard rail barrier or similar structure on the parcel at the corner of Grove and Centre Streets in order to prevent such an occurrence.

Pipe stresses from surface loads are calculated using the Cornell PC Pisces method or the Marston-Boussinesq-Newmark method (or CEPA derivative). These methods are proven (in theory and in practice) to be accurate, and are accepted by the industry as a means of calculating stress on a gas pipeline. The main areas of interest that these methods focus on are: what loads will the pipe witness, what effect the soil has on the loading scenario, and what the pipe can handle in the first place. Consistent with other Algonquin pipelines that are located in paved streets at locations along its 1,100 mile system, the stress levels are well within the engineered design limits of the pipe.



## Air Emissions

**8. What kind of emissions will be released from the M&R Station, at what frequency and at what levels? What studies have been done to determine the health risks of such emissions? How will Spectra monitor these levels to ensure the safety of the residents in the area?**

Algonquin's pipeline system is designed to be a closed system and result in minimal fugitive releases of natural gas. Through proper operation and maintenance, emissions are minimal in terms of both the total quantity of gas transported through the system and the effect these releases would have on air quality. All gas releases for maintenance operations is minimized to small sections of pipe. In addition, Algonquin conducts annual leak detection inspections at all of its pipeline facilities.

The increased use of natural gas supplied by the West Roxbury Lateral is intended to result in a net reduction of air emissions within the City of Boston. Absent this additional supply of natural gas into West Roxbury, oil heat customers will be denied an opportunity to convert to natural gas for heating purposes and instead will need to continue to rely heavily on No. 2 distillate oil as an alternative.

## Spectra Energy Ad Mailing on West Roxbury Lateral Pipeline Tells Only Part of the Story

On December 22 and 23, Spectra Energy blanketed West Roxbury with a mailed advertising piece that touts the benefits of the company's proposal to build a high-pressure natural-gas pipeline called the West Roxbury Lateral (WRL) into the Grove neighborhood. The advertisement neither tells the whole story of this proposal nor speaks honestly about many of the facts. It is our intent here to provide a fuller picture of the West Roxbury Lateral and fill in the numerous gaps left out of the Spectra Energy ad mailer which are crucial to residents' understanding the value of the pipeline as well as potential safety and health issues surrounding its current proposed location. The quotes here are taken directly from the Spectra Energy ad mailer. Our rebuttal, written by the Steering Committee of West Roxbury Saves Energy (WRSE), offers fuller facts and draws attention to unanswered questions. The WRSE rebuttal has been endorsed by Rep. Ed Copping and City Councilors Matt O'Malley and Michelle Wu.

For a factual summary of the WRL and a timeline and other information, visit [WestRoxburySavesEnergy.org](http://WestRoxburySavesEnergy.org).

*In the ad mailer, Spectra Energy says:*

"The WRL is a new natural gas pipeline proposed by Algonquin Gas Transmission..."

*WRSE research shows the full facts are:*

The WRL is part of a **high-pressure interstate** gas transmission system proposed to run through **densely populated neighborhoods** in Dedham and West Roxbury.

*In the ad mailer, Spectra Energy says:*

"[The WRL] will be placed under portions of Washington, Grove, and Centre Streets and will not affect private land."

*WRSE research shows the full facts are:*

Portions of the WRL require easements on private land, such as Meditech in Westwood; other portions run under public land, such as Gonzales Field in Dedham. The Town of Dedham is actively opposing the WRL. The federal Environmental Impact Statement lists all "residences and other structures within 50 feet" of the proposed work (of which the WRL is only a small part): **more than 65% of properties listed for the entire project are associated with the 5 miles of the West Roxbury Lateral.**

*In the ad mailer, Spectra Energy says:*

"Today, 95 percent of the homes and businesses in West Roxbury rely on natural gas from [National] Grid. In fact, there are 146,000 homes in the Boston area that can convert to clean natural gas if the WRL is built and provides additional supply."

*WRSE research shows the full facts are:*

There are **fewer than 10,000 homes in West Roxbury** in total (many of which already have gas). So the proposed interstate gas transmission line is sized to supply **nearly 15 times the total number of homes in West Roxbury?! Natural gas is "clean" only relative to coal and oil; natural gas remains a fossil fuel that produces greenhouse gases and is not renewable.**

*In the ad mailer, Spectra Energy says:*

"The WRL will also help address the cost of heating homes by supplying more natural gas to the area..."

*WRSE research shows the full facts are:*

We are **not aware of any cost-management commitments to consumers** by either Spectra Energy or National Grid related to the proposed project.

*In the ad mailer, Spectra Energy says:*

"It should also be noted that two existing gas pipelines...have been operating within Grove and Centre Streets..."

*WRSE research shows the full facts are:*

The existing pipelines are part of the low-pressure, local distribution network that typically run at 22 psi, **NOT high-pressure pipes such as those proposed by Spectra Energy that will run at 750 psi.**

*In the ad mailer, Spectra Energy says:*

"Elsewhere around the country, natural gas pipelines have been built and safely operated near quarries without incident."

*WRSE research shows the full facts are:*

When asked on multiple occasions for locations of **comparable situations**—adjacent to active quarries in the midst of residential neighborhoods—Spectra Energy has been **unwilling or unable to provide a single example** of another high-pressure gas pipeline in a densely populated residential area adjacent to an active quarry.

In addition to providing the misleading statements above, Spectra Energy omitted from their pipeline campaign ad mailer many crucial facts and steps. These include:

—Spectra Energy is a multi-billion-dollar company based in Houston, Texas, that profits from fossil fuels. The ad mailer indicates a Dedham address, but make no mistake: Spectra Energy is not a local company.

—Community members have followed all procedures allowed by the federal government to raise questions, many of which Spectra Energy has failed to answer. Here are just two of the many questions raised: What are the safety risks, especially with a Metering & Regulating Station adjacent to blasting in the quarry? Why weren't other locations seriously considered?

—When Congressman Lynch in November requested that Spectra Energy propose alternate routes not near the quarry, Spectra Energy offered no suggestions.

—Community members have repeatedly over the past three months asked for an independent health and safety review to address concerns about the location of the WRL. No such review has been performed to date.

—The Spectra Energy proposal has no mitigation measures for business disruption along the construction route, no payments to neighbors whose homes will lose value, and no information about constant noise and pollution emissions during regular, "safe" operation.

—The WRL is a 5-mile spur off the Algonquin interstate pipeline traveling through Westwood and Dedham, ending in West Roxbury. Dedham is fighting the pipeline vigorously.

The ad mailer fails to make clear that the proposed high-pressure pipeline is nothing like the low-pressure lines that bring gas to our homes and that the Metering & Regulating Station proposed to be built across the street from the active, blasting quarry is a quasi-industrial building and enterprise, not a quiet residential neighbor.

We encourage you not to take the information offered in the Spectra Energy advertising mailer at face value or as the full story. Consider the safety and health implications of a high-pressure gas pipeline and Metering & Regulating Station being proposed for a heavily residential area near an active quarry in our neighborhood. Learn more at [WestRoxburySavesEnergy.org](http://WestRoxburySavesEnergy.org) and then call toll free at 866-871-0356 and ask Spectra Energy to answer YOUR questions about the West Roxbury Lateral.

Document Content(s)

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**UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

**ALGONQUIN GAS TRANSMISSION, LLC**

**Docket No. CP14-96-000**

**REQUEST FOR REHEARING OF TOWN OF DEDHAM**

**I. INTRODUCTION**

Pursuant to 15 USC §717r(a) of the Natural Gas Act and 18 CFR §385.713 of the rules of the Federal Energy Regulatory Commission (“FERC”), the Town of Dedham, Massachusetts (“Dedham” or “Town”) hereby requests rehearing of the “Order Issuing Certificate and Approving Abandonment” (“Order”), 150 FERC ¶61,163, that was issued by FERC on March 3, 2015. The Order grants the application filed by Algonquin Gas Transmission, LLC (“Algonquin”) for construction of the Algonquin Incremental Market Project (“Project”) in New York, Connecticut, Rhode Island, and Massachusetts.

Dedham is directly and significantly impacted by the Project, insofar as approximately three miles of a new transmission pipeline will be constructed across the Town, passing through heavily-populated and highly-developed residential and commercial neighborhoods and along local streets and regional highways with high traffic volumes. The pipeline will connect Algonquin’s existing facilities to the south in the Town of Westwood, to a new meter and regulating station (“M&R Station”) to the north in the West Roxbury neighborhood of the City of Boston. As Dedham has demonstrated in comments submitted to FERC during the application process and has expressed to Algonquin officials on numerous occasions, the Project will impose significant adverse impacts on Dedham during the construction period by disrupting traffic, creating noise, and affecting business operations. Further, after the completion of the

Project, Dedham will be bisected, along its busiest roadway, by a high-pressure gas pipeline that poses a severe safety risk in the event of an accident or explosion.

Dedham contends that FERC has failed to assess adequately the Project's significant environmental impacts during construction, as well as the Project's long-term risks. Further, the scope of FERC's review of reasonable alternatives is wholly inadequate, and is seemingly controlled by the prior decisions of the companies that FERC ostensibly regulates, rather than by the requirements imposed on FERC by the Natural Gas Act and the National Environmental Policy Act. As a result, FERC has not engaged in a fair and credible evaluation of alternatives to the Project. Moreover, in the interests of meeting Algonquin's desired construction schedule, the Order allows the immediate commencement of the Project while leaving final details of the Project to be specified at a later date, an approach that has prevented full evaluation of the Project impacts and that places Algonquin in a superior negotiating position in respect to affected municipalities and private landowners.

Dedham requests, therefore, that FERC rescind the Order, expand the scope of its examination of alternatives to the Project, and issue a new Order only after fully considering all alternatives and specifying adequate mitigation measures, on a timetable that reflects the objective of a reasoned outcome and not the schedule desired by the regulated entity.

## **II. STATEMENT OF RELEVANT FACTS**

The Order, at pages 1 through 5, provides the procedural history of the Project, its structural components, and the measures taken by Algonquin to solicit bids from local distribution companies and utilities for the supply of natural gas, as a basis for the construction of the Project.

Dedham first expressed its intent to be an Intervenor by a letter from the Dedham Town Administrator to FERC, dated March 25, 2014. In reviewing the docket at the time that the Draft

Environmental Impact Statement (“DEIS”) was issued, Dedham found that it had not been listed as an Intervenor. Dedham therefore filed both Town of Dedham’s Motion for Late Intervention and Town of Dedham’s Motion to Intervene on Basis of Draft Environmental Impact Statement. In Appendix A to the Order, Dedham is included in the list of timely Intervenors.

In response to the issuance of the DEIS, Dedham, through its Board of Selectmen, filed “Town of Dedham: Comments on Algonquin Incremental Market Project,” whereby the Board of Selectmen stated its opposition to the Project. Concurrently, Dedham, through counsel, filed “Town of Dedham Comments on Draft Environmental Impact Statement” (“Dedham DEIS Comments”), with detailed comments on issues that were addressed insufficiently in the DEIS, or on conclusions in the DEIS with which Dedham disagreed.

In the period since the issuance of the DEIS, Dedham has engaged in discussions with Algonquin representatives as to mitigation measures and necessary agreements for the use of Dedham’s property, on the understanding that Dedham remains opposed to the Project. Dedham has also monitored supplemental filings by Algonquin and FERC’s requests and orders, and filings by other parties, as well as reviewing the Final Environmental Impact Statement (“FEIS”) and the Order. As of this date, Dedham continues to engage in discussions with Algonquin representatives, but without waiving any rights to file this Request or pursue other avenues of appeal in opposition to the Project.



### III. STATEMENT OF ISSUES

1. Whether FERC, in preparing the DEIS and FEIS, and in issuing the Order, has failed to comply with NEPA requirements as to the appropriate scope of review of alternatives to the Project.
2. Whether the Order improperly fails to resolve and define the complete and specific mitigation measures that are to be undertaken by Algonquin.
3. Whether FERC's review of potential safety hazards from the completed pipeline is inadequate, thereby rendering FERC's conclusions arbitrary and capricious, and not based on substantial evidence.
4. Whether Algonquin has failed to show, and FERC has erroneously concluded, that the public convenience and necessity require the construction of the Project.

### IV. ARGUMENT

- A. FERC has erred by improperly limiting the scope of alternatives to the Project that are examined and considered in the FEIS.

The stated purpose of an environmental impact statement that must be prepared by a Federal agency is to “provide full and fair discussion of significant environmental impacts and . . . [to] inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts[.]” 40 CFR §1502.1. Further, in determining the scope of examined alternatives, the agency is to consider connected, cumulative, and similar actions. 40 CFR §1508.25. In this instance, FERC has erroneously limited the scope of its examination of alternatives to the Project, with the result that neither FERC nor the public are adequately informed of, or in a position to properly evaluate, reasonable alternatives to the Project.

Dedham is particularly and directly affected by the new pipeline, referred to as the West Roxbury Lateral (“Lateral”), which will be constructed through Dedham along a south to north

route, from an existing Algonquin facility in Westwood, Massachusetts to a new M&R Station in West Roxbury. Approximately three miles of the Lateral will be located within Dedham, nearly all of which will be located within densely developed residential and commercial areas. The Lateral will also pass through Gonzalez Field, a Town-owned park that is used for recreational purposes.

In commenting on the DEIS, Dedham stated:

...the DEIS does not take a sufficiently broad view of the available alternatives to meet the stated objective of the Lateral, which is to provide additional gas supplies to Boston Gas . . . . Instead, the DEIS assumes that, to meet that objective, the M&R Station must be built in West Roxbury, and the Lateral must pass through Dedham to reach the M&R Station. Further, even under an assumption that the Lateral is necessary to serve the Project purpose, the DEIS does not adequately evaluate alternative routes through Dedham that would reduce impacts on residential areas and avoid Gonzalez Field.

(Dedham DEIS Comments, p.1).

Dedham contended, further, that the construction of the Lateral, and its location, was based on the prior identification of a site in West Roxbury as the location of the M&R Station, as requested by Boston Gas, and that the DEIS failed to explore and evaluate other alternatives for connecting the Algonquin supply system to Boston Gas' distribution system. Such alternatives included other routes to serve a West Roxbury M&R Station from other existing or potential Algonquin facilities, and locations other than West Roxbury for a connection between the Algonquin and Boston Gas systems. As Dedham stated:

...based on the narrow focus of the DEIS, it appears that the selection of the West Roxbury M&R Station location was taken as a "given," as was the assumption that the new M&R Station was to be supplied through a connection to the existing Westwood facility. If the beginning and endpoints of the Lateral are accepted without examination, the most direct route is, indeed, through Dedham. The Town objects to this predetermination of the Lateral's route, and requests that the DEIS be revised to expand the geographical scope of the alternatives analysis.

(Dedham DEIS Comments, p.2).

The FEIS, and the resulting Order, do not respond adequately to Dedham's concerns, or satisfy the NEPA regulations. FERC and Algonquin rely on the decision by the Massachusetts Department of Public Utilities to approve a contract between Boston Gas and Algonquin, as a basis for accepting that West Roxbury is the only potential site for a connection between Algonquin's and Boston Gas's systems. As Dedham pointed out in its comments on the DEIS, other connection points and other routes were not considered. The FEIS does not cure this defect in the DEIS, and the resulting FERC decision is, therefore, flawed.

Further, FERC has refused to consider in this proceeding other Algonquin projects that are planned for the near term, which will deliver gas to the New England states and to the Boston area in particular. (Order, ¶¶108-111, 117-119). These are clearly "similar actions" under 40 CFR §1508.25, which should be evaluated together. These other projects are not merely conceptual or indefinite in timing: they are currently the subject of pre-filings with FERC and presentations by Algonquin to Boston-area communities. If those projects are on somewhat different planning and implementation schedules (though only by a year or two), that is the result of Algonquin's decisions.

The fact that Algonquin (and local distribution companies) have one project ready, while others are still on the drawing board, is an insufficient reason to approve the one without considering the others. The projects are similar in nature in purpose, and an overall examination, on a regional basis, of planning to increase gas supplies to New England may reveal feasible alternatives or desirable modifications to the Project.

To consider this Project in isolation fails to comply with NEPA requirements, and lacks common sense. In approving the Project, FERC is allowing the segmentation of its review and evaluation, on both environmental and economic grounds, of Algonquin's several projects.

FERC should not allow its review and approval process to be subject to such manipulation by the regulated entity.

Even assuming that the West Roxbury M&R Station is the necessary endpoint, FERC and Algonquin have inadequately examined an alternative that Dedham suggested, which was to route the southern section of the Lateral within the right of way of an interstate highway, so as to avoid a residential area. (Dedham DEIS Comments, pp. 2-3). The justification for dismissing the feasibility of this alternative was that the alternative is inconsistent with policies of the Massachusetts Highway Department. Where FERC approval preempts both state and municipal regulations, it cannot be said that overriding the preferences of a municipality is feasible, while setting aside the policy of a state agency is not.

Dedham recognizes that some minor modifications have been made to the proposed route of the Lateral during the development of the FEIS in the interest of reducing and mitigating impacts, including a revision of the route across the Town-owned Gonzalez Field. (Order, ¶¶132-133). Nonetheless, this has been “tinkering at the margins” of the Project, without fully evaluating the potential alternatives, on a region-wide basis. Dedham concludes that FERC’s decision making has been driven by Algonquin’s entreaties to reach a speedy decision that will allow construction to begin immediately on one project while Algonquin develops others, which will be presented to FERC within the next year or two, after the current Project is a fait accompli. This does not satisfy the objectives and requirements of NEPA review, and the Order must be rescinded for that reason.

- B. The Order is incomplete, insofar as it fails to define fully the mitigation measures that are to be undertaken by Algonquin.

If (notwithstanding the objections of Dedham and many other respondents) the Project is to be approved and proceed forward, Dedham recognizes that Algonquin has committed to some mitigation measures to reduce impacts on Dedham during the construction period, and that some specific measures have been incorporated, by reference, in the Order. These relate particularly to the timing and manner of construction, with the objective of reducing impacts on traffic flow and (in the case of Gonzalez Field) coordinating construction timing with the existing use of the facility, to lessen (though not eliminate) disruption and displacement.

Nonetheless, other potential measures are indefinite or unaddressed, and have been left, essentially, to be the subject of further negotiations between Algonquin and both municipal and state officials, as well as private landowners. See, e.g., Order, ¶¶79-81, 92-93; Appendix B, Conditions No. 22, 26). Dedham is now engaged in such negotiations with Algonquin concerning additional mitigation measures, beyond those already described in documents referenced in the FEIS and/or Order, to reduce noise and traffic impacts on residences in proximity to the construction route.

FERC's "conditional" approval of mitigation measures reflects the rushed nature of FERC's review, as a result of which FERC has issued its Order while determination of mitigation measures is still ongoing. Given the numerous comments that were filed in response to the issuance of the DEIS, FERC requested additional information from Algonquin, which, in turn, made several submissions of supplemental information, prior to the issuance of the FEIS. Dedham welcomes this process and the efforts made to address the issues raised by comments on the DEIS, but believes that the process of revising the Project and developing mitigation measures has been curtailed by FERC's apparent desire to meet a self-imposed deadline for

issuing the FEIS and the Order. As a result, the Order imposes conditions that, effectively, allow and require that the process of developing measures to mitigate the Project's impacts continue after the Order has already been issued.

FERC's approach of "approve now, figure out the details later" has several negative effects on the development and definition of additional mitigation measures. One effect is that Dedham, and others, find it necessary to file objections to the Order, given the uncertainty as to what mitigation measures will actually be required and implemented. This places some parties in the position of negotiating mitigation measures, while at the same time formally adopting adversarial positions. Further, given the preemptive effect of FERC approval (see Order, ¶151), the Order places Algonquin in a superior negotiating position with respect to state and local entities, to a degree that was not the case prior to the Order being issued.

Instead of issuing an Order with open-ended conditions and undefined mitigation measures, FERC should have withheld the Order until it was possible to include all mitigation measures and modifications within the Project approval. FERC's failure to do so renders its decision arbitrary and capricious, as it leaves important measures to be determined at a future date, and cedes control of key Project details to the applicant.

- C. FERC has inadequately reviewed potential safety hazards from the constructed pipeline, and has failed to require sufficient and reasonable monitoring requirements.

The construction and operation of Algonquin's high-pressure natural gas transmission line raises significant public safety concerns. The route within Dedham, for the most part, passes through heavily populated and developed commercial and residential areas, which are classified as "High Consequence Areas" for purposes of federal natural gas pipeline safety standards. While this classification is noted in the FEIS, Algonquin's and FERC's response is merely to reiterate that the pipeline will be constructed to Federal safety standards. (Order, ¶105).

Dedham certainly hopes that this will be the case, but this ought not to be accepted as conclusive as to the pipeline's safety. An evaluation of risk must involve both the assessment of the likelihood of failure of pipeline construction, and the consequences of failure. Where the consequences would be high (i.e., where, as here, a pipeline passes through a highly-developed and densely-populated area), safety measures ought to be more rigorous.

Safety concerns for the Lateral are heightened by the selected location of the West Roxbury M&R Station, adjacent to an active quarry where blasting occurs. (Order, ¶¶61-66). Dedham accepts and joins in the arguments made in the "Request for Rehearing of the City of Boston Delegation," which addresses the dangers posed by the proximity of the station to the quarry, and the inadequacy of the safety study on which the FEIS bases its conclusion that public safety will not be put at risk. Further, Dedham contends that FERC has not adequately considered the effects of a potential explosion at the M&R Station, or at the portion of the pipeline line in its vicinity, on the remainder of the Lateral that passes through Dedham.

Given the location of nearly the entire Lateral within a High Consequence Area, FERC has not taken adequate measures to minimize risk. Dedham continues to urge, as it did in its comments on the DEIS, that FERC impose specific requirements for post-construction assessment and ongoing monitoring of the pipeline throughout the period of its use, not only at the time of its construction and installation. (Dedham DEIS Comments, p.6). This is not a burdensome requirement, and is certainly a reasonable mitigation measure.

D. Algonquin has failed to show, and FERC has erroneously concluded, that the public convenience and necessity require the construction of the Project.

FERC's inadequate review of reasonable alternatives to the Project, and its failure to consider Algonquin's multiple pipeline-construction and capacity-expansion projects in a unified fashion, is not only a violation of NEPA requirements: it also prevents FERC from making a reasonable determination as to whether the Project will serve the public convenience and necessity. FERC should require that Algonquin determine and evaluate natural-gas demand and supply options on a regional basis (i.e., for eastern Massachusetts, at a minimum), and that Algonquin, in conjunction with the local utilities that it serves, demonstrate that its individual projects will, in combination, address regional needs in a comprehensive and cost-efficient manner.

Instead of such regional planning, FERC has adopted a reactive and short-sighted approach that considers the "public necessity" to be met as long as the natural-gas supplier can show that local utilities are willing to purchase the product. By basing its decision on the interests and choices of the suppliers and the utilities, FERC abdicates its responsibility to the public at large who are the ultimate consumers, and to the communities that will be affected by the construction and presence of the approved pipelines. As a result, in this instance, the Order is arbitrary and capricious, and not grounded in substantial evidence.



## V. COMMUNICATIONS

Communications and correspondence regarding this proceeding should be served upon:

John J. Goldrosen, Esq.  
Kopelman and Paige, P.C.  
Town Counsel  
101 Arch Street, 12th Floor  
Boston, MA 02110-1109  
Phone: (617) 556-0007  
Fax: (617) 654-1735  
jgoldrosen@k-plaw.com

## VI. CONCLUSION

For the reasons stated herein, the Town of Dedham respectfully requests that its request for rehearing be granted, and that FERC rescind its Order issuing a certificate of public convenience and necessity for the Algonquin Incremental Market Project.

TOWN OF DEDHAM,

By its attorney,

/s/ John J. Goldrosen  
John J. Goldrosen (BBO# 634434)  
Kopelman and Paige, P.C.  
Town Counsel  
101 Arch Street, 12<sup>th</sup> Floor  
Boston, MA 02110-1109  
(617) 556-0007  
jgoldrosen@k-plaw.com

Date: April 2, 2015

**CERTIFICATE OF SERVICE**

I, John J. Goldrosen, hereby certify that on the below date, I served copies of the foregoing "Request for Rehearing of Town of Dedham" by electronic mail upon the parties designated on the service list in this proceeding.

Dated: April 2, 2015

/s/ John J. Goldrosen  
John J. Goldrosen

518961/DEDH/0191

Document Content(s)

DEDHAM Request for Rehearing.PDF.....1-13

CP14-96

ASSOCIATED  
PUBLIC FILECongress of the United States  
Washington, DC 20510

April 3, 2015

Chairman LaFleur  
Federal Energy Regulatory Commission  
888 First Street NE  
Washington, DC 20426APR 6 2015  
OFFICE OF  
EXTERNAL AFFAIRS  
APR 6  
2015 10:06 AM  
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Dear Chairman LaFleur,

We write to request your attention to a matter of significant importance to residents of Putnam, Rockland, and Westchester Counties in New York. Despite considerable public comment from affected communities and elected officials, on March 3<sup>rd</sup>, the Federal Energy Regulatory Commission (FERC) approved Spectra Energy's proposal on the Algonquin Incremental Market pipeline (AIM) expansion project. In light of the significant health, safety, and environmental concerns voiced by our constituents, we are requesting that FERC rehear the decision to approve Spectra Energy's proposal and increase its due diligence efforts.

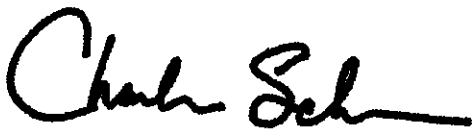
The AIM project is a significant expansion of the current natural gas transmission line on a route which travels through densely-populated communities in Putnam, Rockland, and Westchester Counties. The project would replace the current 26-inch pipeline with a new 42-inch diameter pipeline, nearly doubling its current size. Since the decision to approve this project, our offices have continued to receive comments from impacted communities and from local elected officials who have serious concerns about the safety and potentially negative environmental impacts of the proposed pipeline expansion.

In addition, the Environmental Impact Statement issued by FERC on January 23<sup>rd</sup> did not sufficiently address many of the concerns raised by the local community, including the potential impacts of the pipeline's proximity to Indian Point. We ask that in addition to rehearing the project, FERC commission an independent review of the safety, environmental, and health concerns raised prior to, throughout, and after the approval process.

We hope that FERC will reconsider the decision to approve this project, and in doing so, provide more opportunities for an independent review and additional public meetings. Ensuring the safety of the residents and environment this pipeline will affect is paramount, and we hope that FERC provides adequate opportunity to ensure the safety of this pipeline before issuing a final determination.

2015-00076

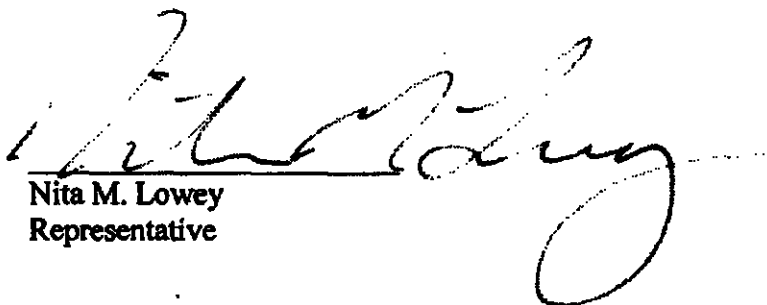
Sincerely,

A handwritten signature in cursive script, appearing to read "Chuck Schumer", written over a horizontal line.

Charles E. Schumer  
United States Senator

A handwritten signature in cursive script, appearing to read "Kirsten Gillibrand", written over a horizontal line.

Kirsten Gillibrand  
United States Senator

A handwritten signature in cursive script, appearing to read "Nita M. Lowey", written over a horizontal line.

Nita M. Lowey  
Representative

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**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**Algonquin Gas Transmission, LLC**

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)  
)

**Docket No. CP14-96-001**

**ANSWER OF ALGONQUIN GAS TRANSMISSION, LLC  
TO REQUEST FOR STAY AND  
MOTION FOR LEAVE TO ANSWER AND ANSWER  
TO REQUESTS FOR REHEARING**

environmental impact statement to accommodate new proposals submitted to the agency, regardless of the uncertainty of maturation.”<sup>94</sup>

Algonquin is still in the planning and development process for the Atlantic Bridge Project. This has involved conducting surveys along the existing pipeline right-of-way and meeting with landowners and municipal officials. Recently, the Commission approved Algonquin’s request to participate in the pre-filing process for Atlantic Bridge, which will be completed later in 2015. Because of this activity, several requesters believe incorrectly that the Atlantic Bridge Project is a “proposed project” for NEPA purposes. Rather, the details of the Atlantic Bridge Project are still being developed as reflected in Algonquin’s recent revision to the project’s scope.<sup>95</sup> The Atlantic Bridge Project is not yet a “proposal” because Algonquin has not applied for a certificate.

For its part, the Access Northeast Project remains in an even more preliminary stage of development. At this time, the open season for the Access Northeast Project began on February 18, 2015 and will continue through May 1, 2015. As a result, it is too early to attempt to establish the scope of the project. Given that the Access Northeast Project is at such an early stage, the potential environmental effects resulting from the Access Northeast Project are not yet reasonably foreseeable and are speculative at this time. Currently, there are no executed precedent agreements for capacity on the Access Northeast Project. Therefore, the Commission properly concluded in the AIM FEIS that it could not consider any potential cumulative environmental impacts from this project, because such impacts are speculative at this time.

Thus, this is not a case of segmentation under NEPA.<sup>96</sup>

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<sup>94</sup> *Id.* at 514.

<sup>95</sup> Monthly Progress Report, Docket No. PF15-12-000 at 1-3 (Apr. 12, 2015).

<sup>96</sup> For a more detailed discussion of this issue, see the response to this comment provided by FERC in the March 3 Certificate Order at PP 108 to 111.



April 20, 2015

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1  
Washington, DC 20426

Food & Water Watch et. al. Protest of FERC's Notice to Use Four Ware Yards, CP14-96-000

RE: The Federal Energy Regulatory Commission's Notice to Use Four Ware Yards  
Algonquin Incremental Market (AIM) Project, Docket #CP14-96-000

To: Kimberly Bose and the Federal Energy Regulatory Commission:

Food & Water Watch, Stop The Algonquin Pipeline Expansion, Better Future Project, Capitalism vs. the Climate, Community Watersheds Clean Water Coalition, Fossil Free Rhode Island, Keep Yorktown Safe, Reynolds Hills, Inc., The Sierra Club Lower Hudson Group, and Rickie Harvey write to oppose the *Notice to Use Four Ware Yards* issued by FERC on April 13, 2015. The Notice states,

"In considering this notice to proceed, we have determined that Algonquin's Initial Implementation Plan, filed on March 27, 2015, as supplemented on April 13, 2015, includes the information necessary to meet the pre-construction conditions in the Commission's March 3, 2015 *Order Issuing Certificate* (Order) issued in the above-referenced docket applicable to these four yards. In addition, **we have confirmed the receipt of all federal authorizations relevant to the approved activity herein.**" (emphasis added)

We are writing to remind FERC that as of the date that Certificate Order was issued, March 3, 2015, the New York State Department of Environmental Conservation and the Rhode Island Department of Environmental Management were reviewing Spectra Energy's applications for air and water permits, and the Rhode Island Coastal Resources Management Council's Federal Consistency Review of the Coastal Zone Management Act was pending.

To date, New York has not issued the following certificates:

Application ID: 3-9903-00099/00002 – Freshwater Wetlands  
Application ID: 3-9903-00099/00003 – Part 401 Water Quality Certification  
Application ID: 3-9903-00099/00004 – Stream Disturbance  
Application ID: 3-3730-00060/00013 – Air Title V - Southeast Compressor Station  
Application ID: 3-3928-00001/00027 – Air Title V - Stony Point Compressor Station

The Title V air application for the Burrillville compressor station is under review by the Rhode Island Department of Environmental Management, and the Federal Consistency Review of the Coastal Zone Management Act by the Rhode Island Coastal Resources Management Council is pending.

In addition to the Request for Rehearing by the Coalition, three Requests for Rehearing are before the Commission requesting a stay of commencement of the AIM project and any related construction activity. The Requests were filed on behalf of our coalition, the Town of Dedham, Massachusetts and the Town of Cortlandt, New York.

The FERC Certificate states on page 50:

145. We stress that this order's authorization is subject to Algonquin's compliance with numerous specific conditions, including the requirement to obtain favorable determinations from other agencies that have jurisdiction over various aspects of the project. Consequently, we find no need to delay issuing our decision, given that our authorizations are conditioned to preclude the applicants from commencing construction until all other necessary permits and approvals under federal law are granted, including water quality certificates under the Clean Water Act.<sup>1</sup>

[Footnote1.] See Environmental Condition 9 in Appendix B to this order

Therefore, we urge FERC to rescind the Notice to Approve Four Ware Yards issued on April 13, 2015.

Sincerely,

Karina Wilkinson  
c/o Food & Water Watch  
533 Congress Street  
Portland, Maine 04101  
kwilkinson@fwwlocal.org

Susan Van Dolsen  
svandolsen@gmail.com  
Stop The Algonquin Pipeline Expansion  
29 Highland Road  
Rye, New York 10580

CC: Margaret Suter, FERC AIM Project Manager

Document Content(s)

FWW et al AIM Comment.PDF.....1-2

ASSOCIATED  
PUBLIC FILE

**FEDERAL ENERGY REGULATORY COMMISSION**  
WASHINGTON, DC 20426

CP14-96

April 24, 2015

OFFICE OF THE CHAIRMAN

The Honorable Charles E. Schumer  
United States Senate  
Washington, D.C. 20510

Dear Senator Schumer:

Thank you for your April 3, 2015, letter regarding Algonquin Gas Transmission LLC's (Algonquin) Algonquin Incremental Market Project ( Federal Energy Regulatory Commission's Docket No. CP14-96-000). I appreciate your views on the Project.

As you know, the Commission recently authorized the Algonquin Incremental Market Project in an *Order Issuing Certificate and Approving Abandonment* on March 3, 2015, in the above-referenced docket. Multiple parties have filed requests for rehearing of the Commission's order. Because the matter is pending before the Commission, I cannot respond to the concerns you express. However, please be assured that the Commission will carefully review all arguments made in the rehearing requests before issuing an order on rehearing.

I hope the above information has been helpful. If I can be of any further assistance in this or any other Commission matter, please let me know.

Sincerely,

Norm C. Bay ✓

Norman C. Bay  
Chairman

2015-000076

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May 1, 2015

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1  
Washington, DC 20426

Food & Water Watch et. al. Protest of Spectra's Request for Notice to Proceed with  
Construction, CP14-96-000

RE: Algonquin Incremental Market (AIM) Project, Docket #CP14-96-000

To: Kimberly Bose and the Federal Energy Regulatory Commission:

Food & Water Watch, Stop The Algonquin Pipeline Expansion, Better Future Project, Capitalism vs. the Climate, Fossil Free Rhode Island, Keep Yorktown Safe, Reynolds Hills, Inc., the Sierra Club Lower Hudson Group and Rickie Harvey write to protest Spectra's request for a Notice to Proceed with construction on five Metering and Regulating Stations and five yards by May 4, 2015.

The request asks for permission for construction at the following Metering and Regulating stations and of the following yards:

Massachusetts Meter Stations

Norwood - 127 Dean Street Norwood, MA  
Brockton - 10 Oak Hill Way Brockton, MA  
Middleborough - 677 Wareham Street Middleborough, MA  
Wellesley - 66 Walnut Street Wellesley, MA  
North Fall River and Assonet - 172 South Main St. Freetown, MA

Yards

Hudson West Yard - Mt. Ivy 395 Route 202, Pomona, NY  
Hudson East Yard - 2071 Albany Post Road (Rt. 9A), Montrose, NY  
Cromwell Yard #1 - 252 Shunpike Road (Rt. 3), Cromwell, CT  
Cromwell Yard #2 - County Line Road, Cromwell, CT  
Dedham Yard - 10 Industrial Drive, Dedham, MA

We are again writing to remind FERC that as of the date that Certificate Order was issued, March 3, 2015, the New York State Department of Environmental Conservation and the Rhode Island Department of Environmental Management were reviewing Spectra Energy's applications for air and water permits, and the Rhode Island Coastal Resources Management Council's Federal Consistency Review of the Coastal Zone Management Act was pending.

To date, New York has not issued the following certificates:

Application ID: 3-9903-00099/00002 – Freshwater Wetlands  
Application ID: 3-9903-00099/00003 – Part 401 Water Quality Certification  
Application ID: 3-9903-00099/00004 – Stream Disturbance  
Application ID: 3-3730-00060/00013 – Air Title V - Southeast Compressor Station  
Application ID: 3-3928-00001/00027 – Air Title V - Stony Point Compressor Station

The Title V air application for the Burrillville compressor station is under review by the Rhode Island Department of Environmental Management, and the Federal Consistency Review of the Coastal Zone Management Act by the Rhode Island Coastal Resources Management Council is pending.

Nine Requests for Rehearing are currently before the Commission, and today's tolling order allows FERC more time to review those Requests. In addition, three Requests for Rehearing are before the Commission requesting a stay of commencement of the AIM project and any related construction activity. The Requests were filed on behalf of our coalition, the Town of Dedham, Massachusetts and the Town of Cortlandt, New York.

The FERC Certificate states on page 50:

145. We stress that this order's authorization is subject to Algonquin's compliance with numerous specific conditions, including the requirement to obtain favorable determinations from other agencies that have jurisdiction over various aspects of the project. Consequently, we find no need to delay issuing our decision, given that our authorizations are conditioned to preclude the applicants from commencing construction until all other necessary permits and approvals under federal law are granted, including water quality certificates under the Clean Water Act.<sup>1</sup>

Therefore, we urge FERC to deny the request for Notice to Proceed with construction of the above-mentioned Metering and Regulating stations and yards.

Sincerely,

Karina Wilkinson  
c/o Food & Water Watch  
533 Congress Street  
Portland, Maine 04101  
kwilkinson@fwwlocal.org

Susan Van Dolsen  
svandolsen@gmail.com  
Stop The Algonquin Pipeline Expansion  
29 Highland Road  
Rye, New York 10580

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<sup>1</sup> See Environmental Condition 9 in Appendix B to this order.

Document Content(s)

FWW et al AIM Protest Letter .PDF.....1-2



**ALGONQUIN GAS TRANSMISSION, LLC**

5400 Westheimer Court  
Houston, TX 77056-5310

713.627.5400 main

**Mailing Address:**

P.O. Box 1642  
Houston, TX 77251-1642



May 28, 2015

Ms. Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
Notice of Commencement of Construction

Dear Ms. Bose:

On March 3, 2015, the Federal Energy Regulatory Commission (“Commission”) issued its Order Issuing Certificate and Approving Abandonment in the above-referenced docket authorizing Algonquin Gas Transmission, LLC (“Algonquin”) to construct, own, operate and maintain the Algonquin Incremental Market Project (“Project”).<sup>1</sup> On March 11, 2015, Algonquin filed a letter with the Commission accepting the certificate. On May 5, 2015, the Commission issued a letter order granting notice to proceed to begin full construction activities at six meter and regulating stations and four ware yards. On May 15, 2015, the Commission issued a letter order granting notice to proceed to begin use of two additional ware yards.

Pursuant to Section 157.20(c)(1) of the Commission’s regulations, 18 C.F.R. § 157.20(c)(1) (2014), Algonquin hereby notifies the Commission that construction activities commenced on May 18, 2015 with site preparation at certain approved meter and regulating stations and ware yards. Enclosed herewith is the Verification for this Notice of Commencement of Construction. Detailed information regarding the construction activities will be provided in the weekly construction reports filed in the above-referenced docket.

If you have any questions regarding this filing, please contact DeAndra Black at (713) 627-5350 or me at (713) 627-5113.

Respectfully submitted,

/s/ Chris Harvey  
Chris Harvey  
Director, Rates and Certificates

Attachment

cc: Maggie Suter (FERC)

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<sup>1</sup> *Algonquin Gas Transmission, LLC*, 150 FERC ¶ 61,163 (2015) (“March 3 Order”).

## VERIFICATION

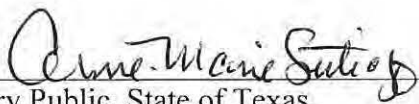
THE STATE OF TEXAS            )  
   )  
 COUNTY OF HARRIS            )

Chris Harvey, being first duly sworn, states that he is the Director, Rates and Certificates for Algonquin Gas Transmission, LLC; that he is authorized to execute this Verification; that he has read the Notice of Commencement of Construction for the AIM Project in Docket No. CP14-96-000 and is familiar with the contents thereof; and that all allegations of fact therein contained are true and correct to the best of his knowledge and belief.

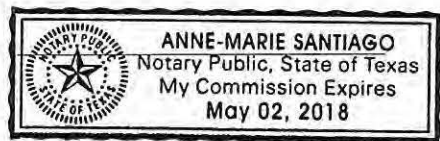
ALGONQUIN GAS TRANSMISSION, LLC

  
 Chris Harvey  
 Director, Rates and Certificates

Subscribed and sworn to before me this 28<sup>th</sup> day of May, 2015.

  
 Notary Public, State of Texas

My Commission Expires:



Document Content(s)

AIM Project Notice of Commencement.PDF.....1-2

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

ALGONQUIN GAS TRANSMISSION, LLC )

Docket No. CP14-96-000

**LOCAL OFFICIALS' EMERGENCY MOTION FOR STAY  
OF CONSTRUCTION OF THE WEST ROXBURY LATERAL PIPELINE**

United States Congressman Stephen F. Lynch, Massachusetts State Senator Michael F. Rush, Massachusetts State Representative Edward F. Coppinger, and Boston City Councilor Matt O'Malley (Local Officials)<sup>1</sup> urge the Federal Energy Regulatory Commission (FERC or Commission) to issue an emergency stay of construction of the West Roxbury Lateral portion (WR Lateral)<sup>2</sup> of the Algonquin Incremental Market Project (AIM Project) pending consideration and resolution of the numerous timely filed Requests for Rehearing of the Commission's March 3, 2015 Order issuing a certificate of public convenience and necessity and approving abandonment to Algonquin Gas Transmission, LLC (Algonquin) to construct and operate the AIM project.<sup>3</sup> The Local Officials are particularly concerned with the portion of the WR Lateral that abuts active blasting at the West Roxbury Crushed Stone Quarry (Quarry) and is

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<sup>1</sup> Local Officials' districts include, in pertinent part, the following communities: Town of Dedham, Town of Westwood and City of Boston's West Roxbury community as represented by United States Congressman Stephen F. Lynch; Town of Dedham, Town of Westwood and City of Boston's West Roxbury community as represented by Massachusetts State Senator Michael F. Rush; City of Boston's West Roxbury community as represented by Massachusetts State Representative Edward F. Coppinger; and City of Boston's West Roxbury community as represented by Boston City Councilor Matt O'Malley.

<sup>2</sup> Significantly, the WR Lateral portion of the AIM Project includes construction of a 4.9-mile high-pressure pipeline that would transmit gas from Algonquin's facilities in the Town of Westwood through the Town of Dedham into a new metering and regulating station to be constructed in the City of Boston's West Roxbury neighborhood.

<sup>3</sup> Nine entities filed Requests for Rehearing with FERC relative to the March 3, 2015 Order. Significantly, the Request for Rehearing of the City of Boston Delegation was filed with the Commission on April 2, 2015 (Boston's Rehearing Request).

adjacent to a densely populated residential community. In light of the Commission's summary turnaround in granting its June 11, 2015 Partial Notice to Proceed with Massachusetts Facilities and Archaeological Data Recovery (Partial Notice to Proceed) in response to Algonquin's June 8, 2015 Request for Authorization to Commence Construction of Certain Segments of the West Roxbury Lateral Pipeline (Algonquin's Request), Local Officials submit that a ruling on this motion is urgent.

## **I. REQUEST FOR STAY**

The Administrative Procedure Act<sup>4</sup> provides the standard of review for the Commission in granting a stay. Pursuant to this Act, the Commission has established that a stay will be granted when "justice so requires."<sup>5</sup> The Commission typically assesses several factors on a case-by-case basis in determining the merits of granting a stay, including: (1) likelihood the party requesting a stay will suffer irreparable injury without a stay; (2) whether issuing a stay may substantially harm other parties; and (3) whether a stay is in the public interest.<sup>6</sup> When balancing these factors, the Commission additionally assesses whether the absence of a stay will preclude future relief.<sup>7</sup> Accordingly, no single factor proves dispositive in granting a stay, and the Commission has discretion to grant a stay if it is in the interest of justice.

### **A. Irreparable Harm to Local Officials' Communities**

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<sup>4</sup> 5 U.S.C. §705

<sup>5</sup> *National Fuel*, 139 FERC ¶ 61, 307 (2012).

<sup>6</sup> See, e.g., *Millennium Pipeline Company, L.L.C.*, 141 FERC ¶ 61,022, at P 13 (2012) (*Millennium*); *Ruby*, 134 FERC ¶ 61,103 at P 17; *AES Sparrows Point LNG, LLC*, 129 FERC ¶ 61,245, at P 18 (2009) (*AES*); *Columbia Gas Transmission LLC*, 129 FERC ¶ 61,021, at P 6 (2009) (*Columbia Gas*); *Guardian Pipeline, L.L.C.*, 96 FERC ¶ 61,204, at 61,869 (2001) (*Guardian*).

<sup>7</sup> *Virginia Petroleum Jobbers v. FERC*, 259 F.2d 921 (D.C. Cir. 1958).

The prospect of irreparable harm, coupled with the inadequacy of legal remedies that could prevent such harm, constitute the basis for a stay.<sup>8</sup> Notwithstanding that mere injuries are not enough to justify a stay, the “possibility that other corrective relief will not be available at a later date weighs heavily in favor of a finding of irreparable harm”.<sup>9</sup>

Here, Local Officials’ communities face irreparable harm in the absence of a stay given that the entire portion of the WR Lateral and West Roxbury Meter Station (WR Station) will be located in high consequence areas (HCA) “where a gas pipeline accident could do considerable harm to people and their property,” and in which the blast radius for a pipeline or meter station explosion spans 300 feet.<sup>10</sup> These concerns are substantially exacerbated by the fact that a significant portion of the WR Lateral directly abuts active blasting at the Quarry.<sup>11</sup> Given the risk of “significant incidents”<sup>12</sup> involving gas pipeline leaks in general, the combination of a gas pipeline abutting an active blasting quarry site has the dangerous potential to lead to severe and irreparable physical, environmental and economic harm. As such, there is indeed a serious likelihood of irreparable harm to the Local Officials’ interests in protecting their densely populated residential communities. Moreover, “the possibility of other corrective relief” in this situation would surely “not be available at a later date” to offset such substantial harm. As such, these circumstances would certainly “weigh heavily in favor of a finding of irreparable harm”<sup>13</sup> and thus satisfy FERC’s basis for granting a stay.

### **B. Grant of a Stay Will Not Harm Algonquin**

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<sup>8</sup> *Wisconsin Gas v. FERC*, 788F.2d 669, 674 (D.C. Cir. 1985).

<sup>9</sup> *Virginia Petroleum Jobbers*, 259 F.2d at 925.

<sup>10</sup> Boston’s Rehearing Request, p. 4.

<sup>11</sup> *Id.*

<sup>12</sup> Significant incidents include (1) death (2) personal injuries requiring hospitalization, and (3) property damage of more than \$115,000. At least 1,237 “significant incidents” occurred between the years 1994 and 2013. *Id.*

<sup>13</sup> *Virginia Petroleum Jobbers*, 259 F.2d at 925.

While the harm to the Local Officials' communities would be irreparable in the absence of a stay, Algonquin would not be prejudiced if a stay is granted because Algonquin can feasibly pursue viable alternatives for its metering station site as well as its route for the WR Lateral.<sup>14</sup> As discussed further in Boston's Rehearing Request, the Commission lacked legal merit in finding that the proposed alternative metering site was not technically feasible.<sup>15</sup> In fact, the Commission's only stated rationale for dismissing the alternative site lies in the fact that it was located on residential land; would result in traffic increases; and would require the demolition of a residential home.<sup>16</sup> Alternatively, the current WR Station proposal would cause similar traffic impacts to the densely populated Centre Street in West Roxbury, in which Algonquin currently plans to use police details and adjustments to its construction schedule to mitigate lengthy delays in this area.<sup>17</sup> Moreover, given the approximately one billion dollar price tag of the AIM Project, Algonquin surely enjoys the financial resources to buy the residential property at issue in order to alleviate the concerns associated with demolishing one single home.<sup>18</sup>

Similarly, Algonquin and the Commission were presented with two viable alternative routes for the WR Lateral. One such alternative route would require 0.5 miles less construction; cross five fewer roads; and would pass within 50 to 100 feet of far fewer residences than the WR Lateral.<sup>19</sup> Most importantly, the proposed routes would avoid the Quarry, and thus would

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<sup>14</sup> Boston's Rehearing Request, pp. 16-22 (discussing the feasibility of an alternative metering site and alternative pipeline route). Boston asserts that not only would such alternatives indeed prove technically feasible, such alternatives would in fact prove *beneficial* to Algonquin. (emphasis added). *Id.*

<sup>15</sup> *Id.*, p.16.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> *Id.*

<sup>19</sup> Boston's Rehearing Request, p. 20.

substantially mitigate the most pressing concern associated with the WR Lateral.<sup>20</sup> In light of these facts, Algonquin has the viable option of pursuing these alternative route(s), which would entail similar traffic concerns, but with lesser construction expenses—and importantly, would allow Algonquin to circumvent active blasting at the Quarry.

As such, Local Officials submit that Algonquin would not be harmed if a stay is granted given the viable alternatives available. Local Officials further contend that such alternative(s) would actually benefit Algonquin by alleviating the genuine concern of potentially boundless mitigation expenses associated with the serious risk of natural disaster inherent in its proposed WR Lateral route.

### **C. Stay Is In the Interest of Justice**

Justice requires that the Commission should not allow construction to commence or continue on the WR Lateral while the possibility exists that the Commission will decide to reconsider or revoke the Certificate of Approval for such construction. If the Commission does not grant a stay and allows construction to commence and to continue while the Commission is reviewing the Requests for Rehearing, Local Officials' communities will be affected by the AIM Project's WR Lateral construction impacts immediately, notwithstanding the fact that the Commission may ultimately decide to reexamine or disapprove the AIM Project. This would constitute an unfair and unreasonable outcome with the potential for irreparable harm to Local Officials' communities as outlined above.

The Commission's May 1, 2015 Order Granting Rehearing for Further Consideration (Rehearing Order) states that rehearing is being granted "to afford additional time for

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<sup>20</sup> The City of Boston asserts, based on meticulous analysis, that there was a clear lack of "careful review of the safety issues..." that was "not rooted in the law, facts and science." *Id.*, p. 22.



consideration of the matters raised or to be raised" in the various Requests for Rehearing. The Commission stated further that the Requests for Rehearing "will be addressed in a future order", but did not specify or limit the duration of the Commission's consideration. Meanwhile, as requested by Algonquin, the Commission has issued the Partial Notice to Proceed for site preparation activities at the sites of metering and regulating stations. As such, Algonquin is now currently preparing to commence construction of the WR Lateral pipeline itself. Given the potentially grave consequences of allowing construction to continue along an active quarry blasting site while nine timely filed Requests for Rehearing have yet to be considered (with no timeline established for consideration), Local Officials submit that an emergency stay is clearly in the interest of justice.

## **II. CONCLUSION**

WHEREFORE, for the foregoing reasons, Local Officials respectfully request that the Commission grant this emergency request to STAY Algonquin's construction of the WR Lateral portion of the AIM Project and refrain from issuing any further Notices to Proceed with any construction, including any preliminary or preparatory activity, on any and all portions of the WR Lateral until such time as consideration and resolution is duly given to the Requests for Rehearing. Further, Local Officials urge the Commission to rule promptly on this stay request in light of the Commission's recent June 11, 2015 Partial Notice to Proceed with construction on the WR Lateral.

Respectfully submitted this 23<sup>rd</sup> day of June, 2015.

Local Officials:

United States Congressman Stephen F. Lynch

Massachusetts State Senator Michael F. Rush

Massachusetts State Representative Edward F. Copping

Boston City Councilor Matt O'Malley

Document Content(s)

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**ALGONQUIN GAS TRANSMISSION, LLC**

5400 Westheimer Court  
Houston, TX 77056-5310

713.627.5400 main

**Mailing Address:**

P.O. Box 1642  
Houston, TX 77251-1642



November 16, 2015

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE  
Washington, DC 20426

Re: *Algonquin Gas Transmission, LLC*, Docket No. CP14-96-000  
Weekly Report No. 23

Dear Ms. Bose:

On March 3, 2015, the Federal Energy Regulatory Commission (“Commission”) issued its Order Issuing Certificate and Approving Abandonment in the above-referenced docket authorizing Algonquin Gas Transmission, LLC (“Algonquin”) to construct, own, operate and maintain the Algonquin Incremental Market Project (“Project”).<sup>1</sup> Pursuant to Environmental Condition No. 8 of Appendix B to the March 3 Order, Algonquin hereby submits its weekly status report for the reporting period from October 24, 2015 through October 30, 2015. In addition, Algonquin hereby submits a revised West Roxbury Lateral Construction Schedule.

If you have any questions regarding this filing, please contact the undersigned at (713) 627-5113 or Austin Isensee at (713) 627-4121.

Respectfully submitted,

/s/ Chris Harvey

Chris Harvey  
Director, Rates and Certificates

Enclosures

cc: Maggie Suter (FERC)

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<sup>1</sup> *Algonquin Gas Transmission, LLC*, 150 FERC ¶ 61,163 (2015) (“March 3 Order”).



**ALGONQUIN GAS TRANSMISSION, LLC  
ALGONQUIN INCREMENTAL MARKET PROJECT  
DOCKET NO. CP14-96-000  
WEEKLY CONSTRUCTION STATUS REPORT**

**Week Ending: October 30, 2015**

**Report #23:**

**WEEKLY STATUS REPORT  
For the Period of October 24, 2015 through October 30, 2015**

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**ALGONQUIN GAS TRANSMISSION, LLC  
ALGONQUIN INCREMENTAL MARKET PROJECT  
DOCKET NO. CP14-96-000  
WEEKLY CONSTRUCTION STATUS REPORT**

**Week Ending: October 30, 2015**

**Report #23:**

**WEEKLY STATUS REPORT  
For the Period of October 24, 2015 through October 30, 2015**

**Project Summary**

**Planned Construction Status**

Projections for planned construction activities on the Project are provided on the following pages.

**Notice to Proceeds**

To date, Algonquin has received seventeen Notices to Proceed ("NTP") from the FERC for various yards, the 2015 Connecticut and Massachusetts Meter & Regulating ("M&R") Stations, Cromwell Compressor Station, Chaplin Compressor Station, Burrillville Compressor Station, Oxford Compressor Station, Stony Point Compressor Station, certain sections of the West Roxbury Lateral, as well as the E-1 System Loop, E-1 System Take-up and Relay, Cromwell Line-36A Loop Extension, the Haverstraw to Stony Point Take-up and Relay, and the Stony Point to Yorktown Take-up and Relay. Algonquin also has received NTPs for the I-84/Still River HDD and various exploratory digs on the Stony Point to Yorktown Take-up and Relay.

**Environmental Training**

To date provided environmental training for approximately 1,707 contractor personnel and Algonquin inspection staff.

**Update on Federal Authorizations**

All federal authorizations for work where notice to proceed has been granted have been obtained.



**ALGONQUIN GAS TRANSMISSION, LLC  
ALGONQUIN INCREMENTAL MARKET PROJECT  
DOCKET NO. CP14-96-000  
WEEKLY CONSTRUCTION STATUS REPORT**

**Week Ending: October 30, 2015**

**Report #23:**

**WEEKLY STATUS REPORT  
For the Period of October 24, 2015 through October 30, 2015**

**2015 Pipeline Construction Summary**

2015 Pipeline Facilities	Description	Projection for next Reporting Period
<b>Haverstraw to Stony Point Take-up &amp; Relay</b>	Continued clearing activities.	Continue clearing activities.
<b>Stony Point to Yorktown Take-up &amp; Relay</b>	Completed clearing and continued grading activities between Mott Farm Road and the west side of the Hudson River. Continued exploratory excavation downstream of Mott Farm Road (Valve Site 142). Continued crossover piping work at Bleakley Avenue (Valve Site 143). Continue site work to prepare both sides of the Hudson River HDD work area. Continue site work at Valve Sites 15 and 15B. Continued clearing and grading activities from the east side of the Hudson River working east.	Continue exploratory excavation downstream of Mott Farm Road (Valve Site 142). Continue crossover piping work at Bleakley Avenue (Valve Site 143). Continue site work to prepare West and East Side of Hudson River HDD work areas. Continue clearing and grading activities from the east side of the Hudson River working east. Continue site work at Valve Sites 15 and 15B.
<b>Southeast to MLV 19 Take-up &amp; Relay</b>	I-84 /Still River HDD continued as well as activities at MLV 19.	I-84/ Still River HDD and activities at MLV 19 will continue.
<b>E-1 System Lateral Loop Extension</b>	Clearing, grading, trenching, lowering-in, and backfilling activities are complete. Tie-in activities at waterbody/wetland crossing are completed. Cleanup activities completed.	Address restoration punchlist items.
<b>E-1 System Take-up &amp; Relay</b>	Pipeline installation work is complete. Permanent facilities are installed were placed into operation on October 29 <sup>th</sup> and are currently operating at originally certificated capacity levels until further AIM Project facilities are complete and approved to be placed into service. Minor punch-list items required to finish site.	Address restoration punchlist items.
<b>Cromwell Line-36A Loop Extension</b>	Clearing, grading, trenching, lowering-in and backfilling activities are complete. Tie-ins activities at waterbody and wetland crossings are complete. Tie-in activities at wetland/waterbody crossings were completed. Cleanup activities initiated.	Cleanup activities will continue.
<b>West Roxbury Lateral</b>	Bond Brothers continued handling of material and spoils at the 10 Industrial Drive yard in Dedham. Crews continued on	Bond Brothers will continue handling of material and spoils at the 10 Industrial Drive yard in Dedham. Bond Brothers will continue



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2015 Pipeline Facilities	Description	Projection for next Reporting Period
	Washington Street and Providence Highway in Dedham and Washington Street in West Roxbury with saw cutting, excavation, pipe installation, cathodic protection installation, backfill, and temporary asphalt patch in these areas. Saw cutting and excavation began on Grove Street in West Roxbury. Boring subcontractor continued to install the I-95 bore.	onto Washington Street in Dedham and West Roxbury. Providence Highway night work will continue. Pipeline installation work will continue on Grove Street in West Roxbury. Boring subcontractor will continue casing installation for the I-95 crossing.

**2015 Current Pipeline Construction Activity by Segment**

Construction Status: Haverstraw to Stony Point Take-up & Relay		
Activity	% Complete	Comments
<b>Installation of new 42-inch diameter Mainline</b>		
Clearing	11%	Continued clearing activities.
Grading	0%	
Pipe Removal	0%	
Lowering-in and Backfilling	0%	
Cleanup and Restoration	0%	

Construction Status: Stony Point to Yorktown Take-up & Relay		
Activity	% Complete	Comments
<b>Hudson River Horizontal Direction Drill</b>	7%	Continue setup for HDD work areas on both sides of the Hudson River. Initiated stringing for pull string pipe.
<b>Installation of new 42-inch diameter Mainline</b>		
Clearing	32%	Continued clearing activities.
Grading	28%	Continued grading activities.





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**Construction Status: Stony Point to Yorktown Take-up & Relay**

Activity	% Complete	Comments
Pipe Removal	1%	Initiated pipe removal and trenching activities.
Lowering-in and Backfilling	0%	
Cleanup and Restoration	0%	

**Construction Status: Southeast to MLV 19 Take-up & Relay**

Activity	% Complete	Comments
<b>I-84/Still River Horizontal Direction Drill</b>	41%	HDD pilot hole completed. Continued reaming of drill path and welding of pull string pipe.
<b>Installation of new 42-inch diameter Mainline</b>		
Clearing	3%	Continued clearing activities at MLV 19 work area.
Grading	3%	Continued grading activities at MLV 19 work area
Pipe Removal	0%	
Lowering-in and Backfilling	0%	
Cleanup and Restoration	0%	

**Construction Status: E-1 System Lateral Loop**

Activity	% Complete	Comments
<b>Installation of new 12-inch diameter Lateral Loop</b>		
Clearing	100%	Clearing activities complete.
Grading	100%	Grading activities complete.
Lowering-in and Backfilling	100%	Lowering-in and backfilling activities complete.
Cleanup and Restoration	100%	Completed clean up and restoration activities.

**Construction Status: E-1 System Take-up & Relay**

Activity	% Complete	Comments
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<b>Construction Status: E-1 System Take-up &amp; Relay</b>		
<b>Activity</b>	<b>% Complete</b>	<b>Comments</b>
<b>Susquetonscut Brook/N.E. Central RR Horizontal Direction Drill</b>	100%	HDD and pullback complete.
<b>Installation of new 16-inch diameter Lateral</b>		
Clearing	100%	Clearing activities complete.
Grading	100%	Grading activities complete.
Pipe Removal	100%	Pipe removal activities complete.
Lowering-in and Backfilling	100%	Completed lowering-in and backfilling activities.
Cleanup and Restoration	100%	Completed cleanup and restoration activities.

<b>Construction Status: Cromwell (Line-36A Loop Extension)</b>		
<b>Activity</b>	<b>% Complete</b>	<b>Comments</b>
<b>Installation of new 36-inch diameter Loop</b>		
Clearing	100%	Completed clearing activities.
Grading	100%	Completed grading activities.
Lowering-in and Backfilling	100%	Completed lowering-in and backfilling activities.
Cleanup and Restoration	10%	Initiated cleanup and restoration activities.

<b>Construction Status: West Roxbury Lateral</b>		
<b>Activity</b>	<b>% Complete</b>	<b>Comments</b>
<b>Installation of new 16-inch/24-inch diameter pipeline</b>		
Clearing	59%	Continued clearing activities.
Grading	48%	Continued grading activities.
Lowering-in and Backfilling	46%	Continued lowering-in and backfilling activities.
Cleanup and Restoration	43%	Continued cleanup and restoration activities.



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**2015 Current Aboveground Facility Construction Activity**

2015 ABOVEGROUND FACILITIES	Activity	% Complete	Comments / Projection for next Reporting Period
<b>Compressor Stations</b>			
Stony Point Compressor Station	Flushing Unit 7 lube oil piping. Hydro tested 42" yard piping and continued electrical work.	80%	Continue installation of 42" yard piping and small bore piping throughout the site; continue installation of piping and electrical work associated with Unit 7.
Southeast Compressor Station	Completed offsite fabrication in preparation of outage work.	45%	Await SWPPP approval.
Oxford Compressor Station	Installed surge valve and completed restage of Unit 2.	100%	Work is completed.
Chaplin Compressor Station	Continued Compressor building erection; fabrication and installation of piping in new valve area behind compressor building. Continued electrical Trenwa and cable tray work in GEC building to Compressor Building.	65%	Start station outage for tie-ins. Continue installing piping near compressor building. Continue compressor building erection. Continue electrical work throughout site.
Cromwell Compressor Station	Continued Compressor Building erection; fabrication and installation of yard piping and electrical work for Unit 9.	83%	Continue compressor building erection and electrical work. Continue fabrication and installation of Unit 9 yard piping.
Burrillville Compressor Station	Completed electrical and mechanical work for station outage. Continued erection of liner panels and exterior siding in compressor building.	78%	Continue liner and roof panel installation at compressor building. Continue electrical work in GEC and Compressor building.
<b>M&amp;R Station Modifications</b>			
<b>Massachusetts:</b>			
Assonet M&R Station	Electrical work, Instrumentation.	85%	Meter station piping, electrical, instrumentation installation.
Brockton M&R Station	Installation/ Electrical/Commissioning	75%	Install piping, electrical, and instrumentation equipment.
Middleborough M&R Station	Installation of piping and	40%	Painting/Coating. Temporary hold on



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<b>2015 ABOVEGROUND FACILITIES</b>	<b>Activity</b>	<b>% Complete</b>	<b>Comments / Projection for next Reporting Period</b>
	instrumentation		mechanical work. Return late October
North Fall River M&R Station	Site work is complete. Permanent facilities are installed and are operating at originally certificated capacity levels until further AIM Project facilities are complete and approved to be placed into service. Minor punch-list items required to finish site.	85%	Coating/Painting, complete punch list items.
Norwood M&R Station	Site work is complete. Permanent facilities are installed and are operating at originally certificated capacity levels until further AIM Project facilities are complete and approved to be placed into service. Minor punch-list items required to finish site.	95%	Paving areas.
Wellesley M&R Station	Site work is complete. Permanent facilities are installed and are operating at originally certificated capacity levels until further AIM Project facilities are complete and approved to be placed into service. Minor punch-list items required to finish site.	100%	Work is complete. Punch list complete.
West Roxbury M&R Station	No activity.	0%	No activity.
<b>Connecticut:</b>			
Montville M&R Station	Installation/Electrical/Commissioning	75%	Painting, Coating, Backfill Electrical/Instrumentation
Glastonbury M&R Station	Electrical and Instrumentation installation	85%	Awaiting customer work completion, then remove Bypass.
Guilford M&R Station	Final Clean Up and Restoration	95%	Paving Repair/ Clean Up/Fence work
Middletown M&R Station	Site work is complete. Permanent	70%	All improvements installed. Continue commissioning. Awaiting material for



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<b>2015 ABOVEGROUND FACILITIES</b>	<b>Activity</b>	<b>% Complete</b>	<b>Comments / Projection for next Reporting Period</b>
	facilities are installed and are operating at originally certificated capacity levels until further AIM Project facilities are complete and approved to be placed into service. Minor punch-list items required to finish site.		completion
Southbury M&R Station	Site work is complete. Permanent facilities are installed and are operating at originally certificated capacity levels until further AIM Project facilities are complete and approved to be placed into service. Minor punch-list items required to finish site.	95%	Address punch-list items.
Willimantic M&R Station	Excavations, civil work, piping installation.	60%	Piping installation/Coating/Painting.
Oakland Heights M&R Station	No activity.	0%	Site clearing upcoming.

**2015 Construction Yard Activity**

<b>APPROVED YARDS</b>	<b>Activity</b>	<b>% Complete</b>	<b>Comments / Projection for next Reporting Period</b>
<b>Massachusetts:</b>			
Raynham Yard	Piping fabrication for multiple Massachusetts M&R stations.	95%	Yard setup complete. Onsite activities include piping fabrication for multiple Massachusetts M&R stations.
Dedham Yard	Storage of material and spoils from street crews continued. Fabrication and welder testing was performed at this location as well.	95%	Continue storage of material and spoils from street crews. Fabrication to continue as well.
<b>Connecticut:</b>			
Franklin Yard	Yard setup complete.	95%	Continue mobilization activities.
Franklin Yard Expansion	Yard setup complete.	95%	Continue mobilization activities.



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Danbury Yard	Yard setup complete.	95%	Continue mobilization activities.
Cromwell Yard #1	Yard setup complete.	95%	Continue mobilization activities.
Cromwell Yard #2	Yard setup continued.	80%	Continue yard setup activities.
N. Windham Yard	Continued pipeline piping fabrication	95%	Continue pipeline piping fabrication.
Cheshire Yard	Yard setup complete. Continue mobilization activities.	95%	Continue mobilization activities.
Cheshire Yard Expansion	No activity.	0%	No activity.
Lee Farm Yard	Continued yard preparation and mobilization activities.	20%	Continue yard preparation and mobilization activities.
<b>New York:</b>			
Hudson East Yard	Continue mobilization activities.	95%	Yard setup completed. Continue mobilization activities.
Hudson West Yard	Continued yard preparation and mobilization activities.	80%	Continue mobilization activities.
Dansville Yard	No activity.	0%	No activity.

**Problems Encountered and Noncompliance Observed**

<b>Problems, and/or Non-compliance Observed and Corrective Actions Taken</b>			
<b>Date Observed MP Location</b>	<b>Description</b>	<b>Corrective Actions Taken</b>	<b>Resolution Date</b>
10/27/2015 Stony Point Compressor Station	The Environmental Inspector observed six 55-gallon barrels of oil onsite without secondary containment. Non-Compliance issued by Environmental Inspector	The contractor placed the barrels of oil within containment of 110 percent	10/27/2015
10/29/2015 West Roxbury Lateral – MP 3.5	During a daily site inspection EI observed a chainsaw left on the ground unattended without being placed into secondary containment. Problem Area issued by Environmental Inspector	EI informed superintendent of the issue and the chainsaw was immediately placed into containment. Additionally, superintendent included the incident in the following morning meeting.	10/30/2015



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10/30/2015 Cromwell Discharge – MP 2.0	At a cleared forested upland site, adjacent to the new valves and launcher, a large number of wooden forms, lumber, rock shield, pipe and chain link fence panels were placed outside the west workspace limit. Additionally, excess wet concrete was washed-out or dumped on the upland surface, where it flowed off the staked ROW limit to the west. Non-Compliance issued by FERC Monitor	Contractor was informed of the issues onsite. They mobilized the clean-up crew to site to start bringing site back into compliance. A discussion with the onsite inspector, contractor superintendent and the concrete contractor was conducted, and the issues were addressed in the following morning meeting.	10/31/2015
<b>Notes:</b>			

**Landowner Resident Complaints and Resolutions**

Landowner/Resident Complaints and Resolutions					
Segment	Tract No.	Date/Call Taken By	Landowner	Problem/Concern	Resolution/Follow-up
E-1 System Take-up and Relay	E-1-80, 81, 80.01, 81.01 & 82	7/16/2015 Allyn deVars	Mark and Dan Roberts	Mark and Dan Roberts are not happy with the tree clearing operations and would like to have seen several trees saved on their parent's properties. Mark feels they were misled regarding the tree clearing process.	Agent Allyn deVars explained to Mark and Dan that the workspace had been staked weeks before the clearing crew arrived and the trees that they had talked about trying to save was just not possible because the trees would become unstable once the right of way was graded causing a safety hazard. Allyn stated that the white flagging on the stakes marked out the limits of the TWS which was acquired from their parent, who are the fee owners of the property and the compensation they received included the trees. Dan still unsatisfied with Allyn's response; called Houston Operations Right of Way Dept. to complain. Dan was directed to contact Ron Johnson, Right of Way Manager for Engineering & Construction. Allyn offered the wood to Mark from the large tree at the edge of the ROW as additional compensation and Mark stated that as an arborist, he believed the value of the tree is more than the tree itself, but also as a part of the



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					landscaping. AGT is having an evaluation done on the tree and will compensate landowner accordingly. AGT has received evaluation on tree but has been waiting to receive evaluation from Landowner (Mark) per his request. Mark feels the tree is worth more than the tree itself due to it being part of the landscaping and he wanted to put together his own evaluation, but we have yet to receive anything from him. 9/9/15 ROW Agent Allyn deVars followed up with Mr. Roberts regarding the narrative. Mr. Roberts stated he had to take some time to set aside his emotions before starting to write the narrative and had been hoping to find a rainy day to work on it. Mr. Roberts expects to have it complete in a few days. <b>Follow-up required.</b>
West Roxbury Lateral	Abutter	9/22/2015 Bill Simmons	Sophie Cobi	Sophie Cobi visited Dedham Town Hall to complain about the project. Mr. Simmons visited Ms. Cobi in her home to address her complaints. Her complaints were about noise originating from the industrial yard behind her home.	Mr. Simmons offered solutions to her, but Ms. Cobi rejected them. Mr. Cobi wants the project to either stop or move her to a new house. <b>Follow-up required.</b>
West Roxbury Lateral	Abutter	10/2/2015 Aaron Welles	Hamudy Sinclair	Mr. Sinclair called to complain about noise from steel road plates and vibrations in his home on Washington Street. Mr. Sinclair also stated that the vibrations have caused cracks to form in his home.	ROW supervisor will contact Mr. Sinclair to discuss issues. <b>Follow-up required.</b>
Stony Point to Yorktown Take-up and Relay	Abutter	10/14/2015 Allyn deVars	Matt Geiger	Matt Geiger called ROW Agent, Allyn deVars. Mr. Geiger initially stated that the project goes through his back yard and wanted to know about the stakes that had been placed on his property.	Allyn identified the property which is adjacent to the Teffner property and the division between the two properties is a line of mature shrubs. The shrubs are not planted at the property line and some encroach on the ROW workspace. Mr. Geiger is concerned for the shrubs and is asking if it is possible to leave them in place or if their removal is necessary for the project. Allyn told Mr. Geiger that he would look into this and get back to him. After speaking with Engineering & Construction, they stated at this time it is





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					unknown if the shrubs would have to be removed or not. ROW Agent Allyn deVars will make sure both of the landowners are made aware of this. <b>No follow-up required.</b>
Stony Point to Yorktown Take-up and Relay	N/A	10/14/2015 Allyn deVars	Rachel	Rachel who lives on 9 <sup>th</sup> Street called ROW Agent, Allyn deVars and stated that despite the trucks driving slow down the street, they have been making the house vibrate and this morning her flat screen TV fell off its stand and landed on her son's laptop computer and both are damaged.	ROW Agent Allyn deVars called Rachel asking her to email him photos of the damage to the TV and the computer and also told her to give him a call if she wanted to set up a time to meet. <b>Follow-up required.</b>
Stony Point to Yorktown Take-up and Relay	Abutter	10/15/2015 Allyn deVars	Tracy Dicola	Tracy Dicola called ROW Agent, Allyn deVars complaining about the noise and the loss of trees on the Con-Ed property across the street from her house. Ms. Dicola stated that she was given Allyn's number from a resident of 9 <sup>th</sup> Street who was paid for noise and aggravation. Allyn corrected her and state that they were compensated for the closure of parking on 9 <sup>th</sup> Street for 14 days. Ms. Dicola wanted to be compensated for noise and aggravation due to the volume of vehicles which travel on Broadway. Ms. Dicola retorted that if we did not give her some compensation that she would erect a sign in her yard protesting our vehicles being driven on Broadway.	Allyn told Ms. Dicola that he would be happy to meet with her and to discuss the activities we are doing in the area, and to clarify some of what apparently has been misrepresented to her. Ms. Dicola stated she was leaving for work but would call Allyn with a good time to meet. ROW Agent continues to wait to hear back from Ms. Dicola on when a good time would be to meet. <b>Follow-up required.</b>
E-1 System Loop	E-1-143.02	10/20/2015 Tammy Keith	Leon and Tammy Wrobel	Leon and Tammy Wrobel wrote a letter and emailed it to IRC, Tammy Keith regarding their unhappiness with the restoration on their property and the way they have been being treated by the ROW Agent assigned to clean-up activities.	Tammy spoke with ROW Supervisor, Marty McCarthy regarding the Wrobels complaints. First the ROW Agent was immediately removed from the project and we assured the Wrobels that we will take care of all of their issues. We are working with a local landscaper to address the lawn issues and we have also paid the landowners to have a new fence installed. <b>Follow-up required.</b>
Stony Point to Yorktown Take-up and	N/A	10/22/2015 Tammy Keith	Veronica Yacano	Veronica Yacano called the landowner hotline and stated that she lives on 170 Mott Farm Road	10/22/15 ROW Agent, Susan Walsh called Ms. Yacano to discuss her complaint. Ms. Yacano stated that at



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Relay				and all the pounding and work we are doing is shaking her house and wants it to stop immediately. Veronica also called the Stony Point town supervisor with the same complaint and emailed the Spectra Energy website.	9:30am her whole house shook, as if she were in an earthquake. She stated that pictures fell off the wall, windows cracked, the ceiling and her chimney cracked and the basement floor had sunk and shifted. Ms. Yacano said it had to have happened from our blasting. Susan explained that there is absolutely no blasting going on at this time. Susan told Ms. Yacano that she would investigate the work that was going on in the area that day and get back to her. 10/23/2015 ROW Agents, Susan Walsh and Craig Cloutier went to visit Ms. Yacano to see the damage she claimed was done to her house. Ms. Yacano took Susan and Craig around the house to show them the damage. There were 2 windows that did appear to have cracks. The ceiling was cracked but it seemed to look like it had been patched in the past. The Chimney also showed ½ inch cracks up both sides all the way up to the roof. You could also see the crack had been patched and filled in the past with some kind of concrete caulk. Ms. Yacano also stated that some of the rocks on her stone wall were knocked down as well. Ms. Yacano stated that all of this damage was created by AGT/Spectra blasting the rock on the ROW. She stated that her house shook for a good 3 seconds and it was not from the jack hammering. The contractor was jack hammering while Susan and Craig were at Ms. Yacano's house and you could not feel anything on her property while this work was being done. Susan and Craig reiterated that we have done absolutely no blasting on the project to date. Pictures were taken of all the damage and Susan and Craig said they would investigate the claim more and get back to her. <b>Follow-up Required.</b>
Stony Point to Yorktown	N/A	10/22/2015 Susan Walsh	Fred Shaper	Fred Shaper who lives at 155 Mott Farm Road called Town of Stony	10/22/15 ROW Agent, Susan Walsh called Mr. Shaper to discuss his



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Take-up and Relay				Point Supervisor stating that his whole house shook this morning at 9:34AM.	<p>complaint. Mr. Shaper said at 9:34am this morning, there was a sudden vibration that shook his entire house cracking several walls and his ceiling. He stated he felt the vibration came from somewhere northwest of his house, he checked to see if there had been an earthquake, because that's what it felt like and there hadn't been one. He also mentioned that there had been a similar disturbance at 11:48 on Tuesday. He mentioned hot loads from blasting several times and Susan told him that we have not blasted at all on this project yet. Mr. Shaper said he used to be in construction and he knows what a blasting residual feeling was like. Mr. Shaper wants his house fixed and also wants AGT/Spectra to put a seismometer on his foundation so that everyone can track the seismic activity that's been going and will continue to go on as long as we are working on the same rock ledge that his house and all his neighbors' houses sit on. Mr. Shaper added many observations about the truck traffic on Mott Farm Road and their obscene driving techniques. He would appreciate it to be addressed. Susan told Mr. Shaper that she was going to investigate his complaints and get back to him.</p> <p>10/23/15 ROW Agents Susan Walsh and Craig Cloutier met with Mr. Shaper to investigate the damage that Mr. Shaper claims was done to his house due to AGT/Spectra blasting. Susan and Craig looked over the house and saw cracks in the ceiling and walls. Mr. Shafer stated that his home has been pinned to the rock formation that is under his house for stability. He claims that the only way that this damage could have been done is by us blasting or an act of god. Mr. Shafer understands that things happen and he is not looking to pursue a law suit against us, he just wants his house fixed but he did say if</p>
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					we do not fix his house he will pursue legal action. Pictures were taken of all the damage and Susan and Craig said they would investigate the claim more and get back to him. <b>Follow-up Required</b>
Cromwell Loop	M-492.01	10/26/2015 Tammy Keith	Robert Winoski	Robert Winoski called the Landowner Hotline and had a few questions regarding the restoration process and what type of mix we would be using.	ROW Agent, Mitch Kleist called Mr. Winoski and answered his questions regarding restoration. Landowner was satisfied and commended Spectra and the Contractor of doing a great job. <b>No Follow-up Required.</b>
E-1 System Take-up and Relay	E-1-67	10/26/2015 Mitch Kleist	Nate Cushman	Nate Cushman called ROW Agent, Mitch Kleist and stated that the pipeline markers had been placed in the middle of his two corn fields and wanted to know if they could be moved to the edge.	ROW Agent, Mitch Kleist spoke with Environmental Inspector Brandon Thompson and he stated that he would have a crew move them ASAP. <b>No Follow-Up Required.</b>
West Roxbury Lateral	Abutter	10/26/15 Aaron Welles	Paul Jamiol	Mr. Jamiol wants to make sure that his driveway will not be blocked due to construction work taking place.  Mr. Welles called 617-327-1431 and spoke with Paul Jamiol. He thanked Mr. Welles for the call and told Mr. Welles that he wants to be sure that his driveway will not be blocked during construction. Mr. Welles told him that he will have access to and from his driveway throughout construction. Mr. Welles also told him that should he need to get out or into his driveway that he should let the right-of way agent or a representative of the contractor know so that they can accommodate. Mr. Welles asked him if he has any additional questions and or concerns regarding the WRL; he said he has none. He told Mr. Welles that he appreciated the phone call.	Discussed concerns with landowner. He was satisfied, no further action required.
West Roxbury Lateral	Abutter	10/26/15 Aaron Welles	Lee Miles Transmission owner (Steve)	Spoke with Aaron Welles briefly about his frustrations with this project. Business owner is worried about the road closures causing his	Discussed concerns with business owner. He was satisfied, no further action required.



**ALGONQUIN GAS TRANSMISSION, LLC  
ALGONQUIN INCREMENTAL MARKET PROJECT  
DOCKET NO. CP14-96-000  
WEEKLY CONSTRUCTION STATUS REPORT**

**Week Ending: October 30, 2015**

**Report #23:**

**WEEKLY STATUS REPORT**

**For the Period of October 24, 2015 through October 30, 2015**

				<p>company to go out of business. He has an idea of how to make the construction closures work for his business and pacify the situation.</p> <p>Mr. Welles met with the business owner of Lee Myles Transmission, Steve. He told me that he has a "simple plan" that will eliminate the possibility of "blocking" the driveway of his business during construction. He told Mr. Welles that when the construction activities are in front of his business, they should work in the inside lanes, allowing for traffic to flow north bound and south bound on the outside lanes. He told Mr. Welles that will allow the customers easily access the business and to "pop in" when they need to. Mr. Welles told him that he would present his plan to my supervisor and construction manager to determine if the traffic plan can be like or similar to what he has suggested. He told me that that "this is the only way" to keep his business open; unless the construction "takes place on Saturday." Mr. Welles told Steve that I will communicate his concerns and invited him to call the IRC Hotline should he have any additional concerns. He thanked Mr. Welles for stopping by and we ended our conversation.</p>	
West Roxbury Lateral	Abutter	10/26/15 Aaron Welles	Minnie Dixon	<p>Minnie Dixon was concerned with parking during construction. She wants to be filled in on the situation because she is handicapped and elderly.</p> <p>Mr. Welles stopped by 134 Grove Street, West Roxbury, MA and met with Mrs. Dixon. She told him that after reading the notification flyer's about the construction beginning on Grove Street, she became concerned about her ability to access her driveway during the</p>	Discussed concerns with Mrs. Dixon. She was satisfied, no further action required.



**ALGONQUIN GAS TRANSMISSION, LLC  
ALGONQUIN INCREMENTAL MARKET PROJECT  
DOCKET NO. CP14-96-000  
WEEKLY CONSTRUCTION STATUS REPORT**

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**WEEKLY STATUS REPORT**

**For the Period of October 24, 2015 through October 30, 2015**

				construction activities. Mr. Welles told her that she will have access to her driveway. Mr. Welles told her that she should notify the right-of-way agent or contractor during construction to inform them of the times that she will be coming and going so that they can accommodate her. She told Mr. Welles that she is a retired Boston School teacher and that she is disabled. She told me that she wants to be "proactive" and make sure she is aware of what is going on. Mr. Welles thanked her for contacting Spectra and that should she have any other issues, she can call the IRC Hotline. She thanked Mr. Welles for stopping by and the conversation was ended.	
Stony Point to Yorktown Take-up and Relay	R-119.03	10/27/2015 Allyn deVars	Lucian Spiteri	Lucian Spiteri emailed ROW Agent, Allyn deVars and stated that once in a while he sees trucks coming on Kelly Court and wants a sign put up on Mott Farm Road, that it's not an entrance to the project.	ROW Agent, Allyn deVars spoke with the contractor and they have placed a No Project Access sign up. <b>No Follow-Up Required.</b>
E-1 System Take-up and Relay	E-1-76, 76A & 76B	10/27/2015 Mitch Kleist	Mr. & Mrs. LeVasseur	Mr. & Mrs. LeVasseur contacted ROW Agent Mitch Kleist and stated that the contractor was supposed to place boulders on their property line to deter trespassers. Although the contractor did place a line of boulders on each end of the landowners property, on one end they were placed in the wrong location, about 50-75' off of their property line and placed on their neighbors property Mr. Hermonot who is also not happy about this.	Restoration is complete through this area and all matting has been removed. ROW Agent Mitch Kleist has spoken to each of the landowners and they have agreed for us to pay them to have the boulders moved. <b>No Follow-up Required.</b>
West Roxbury Lateral	Abutter	10/27/15 Aaron Welles	Lissa's Hair and Nails	Lissa, manager of Lissa's Hair and Nails expressed concern about loss of business during construction in front of her business on Grove Street in West Roxbury.	Discussed concerns with manager. She was satisfied, no further action required.
Stony Point to MLV 19 Take-up and Relay	R-119.03	10/28/2015 Marty McCarthy	Lucian & Lucy Spiteri	Mr. and Mrs. Spiteri wrote ROW Supervisor, Marty McCarthy a letter as a follow-up to our letter to them on 09/28/2015. Mr. & Mrs. Spiteri still continue to complain about dust	ROW Agent, Murial Hall met with Mr. & Mrs. Spiteri and offered them compensation for the loss of the use of their swimming pool due to the dust and noise. Mr. & Mrs. Spiteri feel that this



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				and noise. In addition to the constant dust and noise the Spiteri's state they have had to endure work performed past working hours, presumably pipe welding/inspection with generators running into the night, extremely loud noises from the release of compressed air during pipe testing. The Spiteri's are requesting that we immediately stop all work after hours, control the speed of traffic through their back yard, finding different routes or using different trucks to get them up the hill at the 5 mph speed stated in our dust control plan and consider appropriate compensation for the reduction in their quality of life and loss of the use of their property.	offer is a sign of our concurrence that the dust and noise from the construction is limiting the use of their property and subsequently negatively impacting their quality of life. Mr. & Mrs. Spiteri refused the offer because they feel the money only addresses a small portion of the decrease in quality of life which they have endured to date, and will continue to endure until the work is complete. Mr. & Mrs. Spiteri want us to either provide them with a rental residence while construction is going on or purchase their home. <b>Follow-up required.</b>
Haverstraw to Stony Point Take-up and Relay	N/A	10/29/2015 Emma Paolino	Larry Brissing, Highway Superintendent	Larry Brissing, Highway Superintendent for Stony Point called ROW Agent, Emma Paolino stating that he is getting complaints about congestion on Tompkins Ridge Road.	Chief Inspector John Ward spoke to Larry Brissing and assured him that all personnel have been instructed to park on the Right of Way only. <b>No Follow-up Required.</b>
Haverstraw to Stony Point Take-up and Relay	N/A	10/30/2015 Emma Paolino	Frances Arsa Artha	Village of Pomona, Town Clerk emailed ROW Agent, Emma Paolino stating that they were getting complaints from neighbors regarding our work on Woolf Road	ROW Agent, Emma Paolino responded to Frances and explained the tree clearing activities that are going on in that area. <b>No Follow-up Required.</b>
Stony Point to Yorktown Take-up and Relay, Southern Route	R-119.05ML	10/30/2015 Tammy Keith	Charles Martinelli	Charles Martinelli texted IRC, Tammy Keith and stated that as of today his property had not been prepared for him to cross the easement to get to the other side of property as promised in a letter to his attorney.	Spectra and the Contractor are trying to find and set up a safe area that can be set up for Mr. Martinelli to cross the easement to access the other side of his property. <b>Follow-up Required.</b>

**Agency Communication**

Agency Communication



**ALGONQUIN GAS TRANSMISSION, LLC  
ALGONQUIN INCREMENTAL MARKET PROJECT  
DOCKET NO. CP14-96-000  
WEEKLY CONSTRUCTION STATUS REPORT**

**Week Ending: October 30, 2015**

**Report #23:**

**WEEKLY STATUS REPORT  
For the Period of October 24, 2015 through October 30, 2015**

Date	Agency/Contact	MP/ Tract – Reason For Visit	Summary of Discussion
None			
<b>Notes:</b>			



Anticipated West Roxbury Lateral Construction Schedule					
Updated 11/10/2015					
Municipality	Street/ Description	Anticipated Start Date	Anticipated Finish Date	Restrictions	Notes / Comments
Westwood	Westwood Meter Station	September, 2015	June, 2016		
Westwood	Downey Terrace - Sta. 0+00 to 3+00	January, 2016	January, 2016		
Westwood	Norfolk Golf Club - Sta. 3+00 to 7+30	November 30, 2015	January, 2016	Allowed 11/30/15 to 3/15/16	
Westwood	East St. Boring - Sta. 7+30 to 9+50	January, 2016	April, 2016		
Westwood	East St. Sta. 9+50 to 10+50	July 22, 2015	July 30, 2015	Night time const. across MediTech entrance	
Westwood	Elm St., Sta. 10+50 to 19+00	June 19, 2015	July 29, 2015		
Westwood	MediTech - Sta. 19+00 to 23+00	June 19, 2015	August 6, 2015		
Westwood	MediTech - Sta. 23+00 to 24+30	July, 2016	July, 2016	Tie-in after Hydrotest	
Westwood	I-95 Boring - Sta. 24+30 to 27+60	June 23, 2015	December, 2015		
Dedham	Allied Drive, MBTA - Sta. 27+60 to 31+50	December, 2015	December, 2015	Nighttime const. across Allied Drive. (Mon-Fri, 7 am to 5 pm)	
Dedham	MBTA - Sta. 31+50 to 35+50	December, 2015	February, 2016		
Dedham	MBTA Boring - Sta. 35+50 to 36+50	September 14, 2015	December, 2016	Continuous boring while under railroad tracks	
Dedham	Rustcraft Rd., Elm St. - Sta. 62+00 to 36+60	June 17, 2015	December 12, 2015	Mon-Fri, 7 am to 5 pm	
Dedham	Providence Hwy - Sta. 62+00 to 126+50	July 6, 2015	November, 2015	Nighttime construction from Sunday night through Thursday night. One lane closure at 9:00pm to 5:00am and double lane at 10:00pm to 5:00am.	
Dedham	Gonzales Soccer Field - Sta. 126+50 to 131+75	November 15, 2015	December, 2015	Allowed 11/09/15 to 3/15/16	
Dedham	High Street/ Harris Street Intersection - Sta. 131+75 to 133+21	April, 2016	May, 2016	Nighttime construction, Mon-Fri	
Dedham	East St. - Sta. 133+21 to 157+00	July 27, 2015	May, 2016	Mon-Fri, 7 am to 5 pm	
Dedham	Washington St. - Sta. 157+00 to 174+00	September 11, 2015	November, 2015	Mon-Fri, 7 am to 5 pm	
West Roxbury	Washington St. - Sta. 174+00 to 193+50	September 28, 2015	June, 2016		
West Roxbury	Grove Street - Sta. 193+50 to 219+00	November, 2015	July, 2016		
West Roxbury	West Roxbury Meter Station	Quarter 2, 2016	Quarter 3, 2016		
West Roxbury	Centre Street 24" - Sta. 0+00 to 40+70	Quarter 2, 2016	Quarter 3, 2016		
West Roxbury	Centre Street 24" - Tie In	Quarter 3, 2016	Quarter 3, 2016		
Westwood / Dedham / West Roxbury	Hydro Test -16"	Quarter 3, 2016	Quarter 3, 2016		
West Roxbury	Hydro Test -24"	Quarter 3, 2016	Quarter 3, 2016		
General Notes		<ul style="list-style-type: none"> <li>- Work hours are Mon-Sat, 7 am to 5 pm, unless otherwise noted.</li> <li>- No in-street work will be allowed from 11/15/15 to 4/15/16 due to winter street work moratoriums.</li> <li>- Restrictions on work hours and work days will be updated as required.</li> <li>- All non-specific dates will be amended to be more precise as the project timeline moves toward that time period.'</li> <li>- All station numbers are approximate</li> <li>- Contractor will not work in-street during holiday restrictions</li> <li>- Pursuant to FERC FEIS Environmental Condition 2t</li> </ul>			

Document Content(s)

Weekly Report No. 23.PDF.....1-22

Blanch Response to NRC 11-6-15

***Paul M. Blanch***  
***Energy Consultant***

14 December 2015

Mr. Christopher Miller  
Director Division of License Renewal  
Office of Nuclear Reactor Regulation  
USNRC  
Washington, DC 20001

Dear Mr. Miller:

Below is my response to your letter to me dated November 6, 2015. For simplicity and efficiency reasons I have reproduced your letter (with some OCR errors), along with my comments and questions following specific paragraphs.

I wish to thank the NRC Staff for its efforts and acknowledge that some of my issues have been clarified while others remain unresolved. The issues in the letter that have been confirmed are:

- The NRC clearly acknowledges the fact that the buried gas lines have never been analyzed for a leak or explosion, therefore the plants are operating in an unanalyzed condition.
- The control room and the vital switchgear room remain unprotected in the event of natural gas leak that results in explosions or explosive concentrations of methane in these areas.
- The NRC has no procedures to assure the quality of its calculations.
- Entergy/NRC have not verified the potential flammable content of the fuel oil tanks.
- Entergy and all first responders have no procedures in place to respond to a gas explosion or leak. Entergy has no procedures for notifying Spectra in the event of a leak or rupture.
- There are no procedures in place to address "Emergency Preparedness" as required by 49 CFR 192.615 and other requirements of Part 192.
- The NRC has not conducted any signed or dated calculation supporting the Chairman's and the Staff's claims of confirmatory, independent, or bounding calculations in spite of numerous FOIA requests from four different persons.

## Blanch Response to NRC 11-6-15

- The NRC has made no attempts to verify with Entergy, Spectra or with FERC that the design, construction and operation are in compliance with the DOT regulations specified in 49 CFR 192.
- The NRC has not initiated any investigation of alleged material false statements by Entergy.

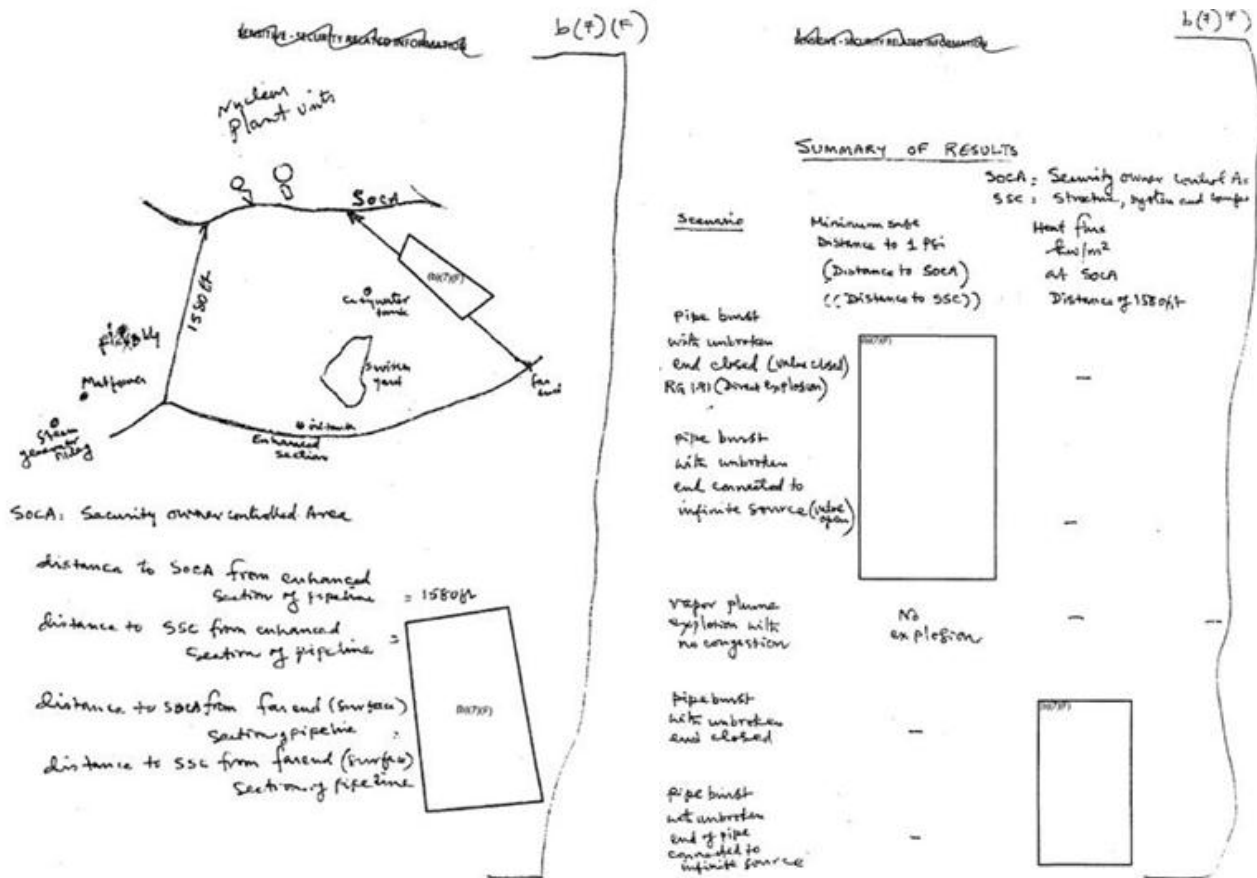
Please acknowledge your agreement with the above conclusions from your response.

In addition to those questions identified in my comments to your letter, the following issues regarding the new and existing gas transmission lines are of major concern because they impact the safety of more than 20 million residents within 50 miles of Indian Point.

At the December 7, 2015 elected officials' meeting with Chairman Burns and in other communications, the NRC continues to claim that its many engineers have analyzed the risk of siting the pipeline at Indian Point and have determined it is safe and therefore an independent risk assessment by a pipeline expert such as Mr. Kuprewicz is not necessary. Yet, Rao Tammara, the NRC engineer who conducted the confirmatory analysis knew so little about pipeline rupture dynamics that he stated to me that he did not even question the 3 minute closure time and also that he was not familiar with the NRC regulations for operating plants as this was the responsibility of NRR. Further, the NRC engineer who conducted the peer review, Mr. Hollcraft, stated in writing, "I'm not a risk engineer, so I cannot definitely say whether their PRA methodology is in keeping with regulatory guidance and is acceptable for this 50.59 evaluation." Moreover, Mr. Hollcraft knew so little about gas pipeline dynamics that the evaluation was for an LNG (liquefied natural gas) pipeline rather than a gas pipeline. The two have very different rupture dynamics.

The NRC Chairman and Staff continue to claim to have conducted an independent, bounding, peer-reviewed, analysis, yet the NRC is unable to provide any signed or dated analysis as requested under FOIA. The following diagrams were what the NRC provided in its FOIA response to my request for the calculations that the NRC used to determine the safety of the siting of the AIM pipeline at Indian Point:

## Blanch Response to NRC 11-6-15



### Examples of partial content of NRC's "Analysis"

## Blanch Response to NRC 11-6-15

While the NRC continues to claim that the NRC's engineers have adequately analyzed the risk and refers to the quantitative details of the NRC's "independent confirmatory analysis," your letter answering the 39 questions also says, "review and approval of the proposed pipeline ... overreaches our regulatory authority", "the NRC does not perform safety-related calculations", "the NRC's role is limited to ensuring the safe operations of Indian Point" and that the licensee performed a "site hazards analysis." It mentions other regulatory agencies, but none have conducted a safety analysis of the siting of the pipeline alongside Indian Point. A valid assessment of the risk of co-locating the pipeline at Indian Point has not been conducted.

Now that the NRC knows that its confirmatory analysis and peer-reviewed analysis are based on false information and defy the basic laws of thermodynamics, are inconsistent with federal regulations, are based on a modeling system that is prohibited for a pipeline rupture in this configuration, and that the NRC does not have the expertise to properly evaluate the consequences of a pipeline rupture of a 42" diameter, high-pressure pipeline at this location, that puts in jeopardy the lives of 20 million people and the economy of the U.S., the NRC refuses to rescind its prior statement to FERC that the siting of the pipeline alongside Indian Point is safe even though it is aware that FERC's approval was based on the NRC confirmation that it is safe.

Furthermore, initial safety studies of the buried pipelines were based on the existence of automatic gas isolation valves. These valves have been removed, yet their removal was not analyzed or documented. The Indian Point Safety Study of 1982, conducted after the removal of the valves, assumed they were operational. Numerous NRC statements including the NRC's letter of November 6, 2015 confirm that the safety of the system that no longer has shut off valves has not been evaluated.

An example of an area of risk that the NRC totally ignored and is required by 10 CFR 50 Appendix A and numerous Regulatory Guides is Control Room Habitability. These regulations require an assessment and protection against of toxic or explosive gas in the control room. The NRC has ignored this problem since initial plant licensing. The control room has a direct path to the outside environment and no protection against natural gas ingress. Should a gas leak occur, natural gas may migrate into the control room and other buildings, exploding with no detection or isolation that may disable the entire control room staff.

Based on my calculations from RG 1.91 and the gas release rate provided by the NRC, the damaging blast radius exceeds 8000 feet which is consistent with similar calculations reviewed and approved by the NRC for Turkey Point, Plant Vogel, Calvert Cliffs, Fort Saint Vrain and the proposed uranium enrichment facility in Eunice, New Mexico. Furthermore, using the NRC-supplied data, the TNT equivalent of a rupture in the first 4 minutes would be equivalent to the atomic bombs dropped on Hiroshima. If the NRC prohibits a propane grill within a nuclear facility, how can it allow a pipeline?

We have been discussing these issues since October 2010 at the expense of many NRC man-hours, taxpayer dollars and our time with little or no progress. I believe it is now time to openly discuss these differences in a professional meeting with all involved parties. Mr. Kuprewicz, elected officials, impacted residents and myself are more than willing to openly discuss these differences with the NRC.

## Blanch Response to NRC 11-6-15

If the NRC is unwilling to have an open professional dialog with us in a meeting then the only alternative is to order Entergy to perform a Risk Assessment as outlined in Attachment 1.

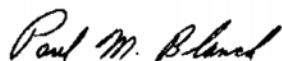
My comments and questions are in ***bold italics*** in the enclosed section titled "Comments and Questions."

I also include OSHA's Recommendations for Process Safety Management within Attachment 1 and a letter to Assemblywoman Galef from Richard Kuprewicz, (Attachment 2) a world-renowned gas safety expert.

The gas lines and their close proximity to the plants also present major Homeland Security concerns that have not been addressed and it would be inappropriate to discuss in public communication. I would appreciate a meeting with the NRC and Homeland Security to discuss specific concerns and potential vulnerabilities.

I look forward to your response with an agreement to conduct a professional meeting between the NRC and those most impacted by the installation of the new gas transmission line and the existing lines, or a firm commitment to sanction an independent risk assessment as outlined in Attachment 2.

Sincerely,



Paul M. Blanch  
135 Hyde Rd.  
West Hartford, CT 06117  
860-922-3119

Enclosure: Blanch Comments and Questions on NRC Letter of 11/6/2015

Attachment 1: What is an Independent Risk Assessment

Attachment 2: Richard Kuprewicz 10/12/15 Letter to Assemblywoman Galef

Cc:

Assemblywoman Galef  
Assemblyman Buchwald  
Congresswoman Lowey  
Congressman Engel  
Senator Schumer  
Senator Gillibrand  
Senator Markey  
Ms. Cheryl McCrary, NRC Director of Office of Investigations  
Mr. Hubert Bell, NRC Inspector General  
Mr. Brian Holian, NRC Director of Nuclear Security  
Mr. Norman Bay, FERC Chairman  
Mr. Fred Dacimo, VP Entergy Indian Point  
NRC Senior Resident Inspector Indian Point  
Mr. Douglas Pickett NRC  
Mr. Arthur Burritt NRC

## Blanch Response to NRC 11-6-15

Mr. William Dean, Director NRR  
Mr. David Dorman NRC Region 1 Administrator  
Mr. Victor McCree, NRC EDO  
Ms. Lisamarie Jarriel, NRC Agency Allegations Advisor



Enclosure  
Comments and Questions on  
NRC Letter of 11/6/2015  
**UNITED STATES NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

November 6, 2015

Mr. Paul Blanch  
135 Hyde Rd.  
West Hartford, CT 06117

Dear Mr. Blanch:

I am responding to concerns you have raised concerning Spectra Energy's proposed 42-inch diameter natural gas pipeline that is planned to cross the owner-controlled property at the Indian Point Nuclear Generating Unit Nos. 2 and 3.

On October 15, 2014, you submitted a petition (Agencywide Documents Access and Management System (ADAMS) Accession No. ML 14294A751), pursuant to Title 10 *Code of Federal Regulations* (10 CFR) Section 2.206, requesting enforcement action against Entergy Nuclear Operations, Inc., the licensee for Indian Point Nuclear Generating Unit Nos. 2 and 3. You stated that the 10 CFR 50.59 site hazards analysis, prepared by the licensee to determine the safety impact on the Indian Point plant due to the proposed pipeline, is inadequate and incomplete. You requested that the Nuclear Regulatory Commission (NRC) issue violations of 10 CFR 50.9, "Completeness and accuracy of information," 10 CFR 50.59, "Changes, tests, and experiments," and 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." You also requested that the NRC issue a Demand for Information seeking, among other items, that Entergy provide the results of a new and realistic risk/hazard analysis.

In addition, by letter dated July 27, 2015, (ADAMS Accession No. ML 15251A050), you provided 39 follow-up questions resulting from your presentation before the Petition Review Board (PRB) on July 15, 2015 (see transcript at ADAMS Accession No. ML 15216A047). During that presentation, the PRB agreed to respond, in writing, to all of your follow-up questions.

Several of your submittals request NRC involvement that overreaches our regulatory authority. This includes NRC review and approval of the proposed pipeline along with the imposition of NRC requirements. Examples include requests to treat the pipeline, valves, control systems, and construction as safety-related and to require that they meet all NRC regulations including quality assurance, redundancy, environmental qualification, and inservice inspections. The NRC's role is limited to ensuring the safe operations of Indian Point Nuclear Generating Unit Nos. 2 and 3. Other Federal government agencies involved in the proposed Spectra Energy gas pipeline expansion include: (1) the Federal Energy Regulatory Commission (FERC), which is responsible for evaluating applications for authorization to construct and

Enclosure  
Comments and Questions on  
NRC Letter of 11/6/2015

operate interstate natural gas pipeline facilities, (2) the Pipeline and Hazardous Materials Safety Administration of the Department of Transportation, which is responsible for administering the national regulatory program to ensure the safe transportation of natural gas, petroleum, and other hazardous materials by pipeline, (3) the Environmental Protection Agency, which is responsible for protecting human health and safeguarding the natural environment, (4) the U.S. Army Corps of Engineers which regulates any work or structures that potentially affect the navigable capacity of a waterbody, (5) the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and (6) the U.S. Fish and Wildlife Service. In addition, there are multiple State and local government agencies that also have separate responsibilities. Therefore, many of your requests for NRC intervention cannot be granted by the NRC because they are outside of the regulatory authority of the NRC.

***While this may be true that the NRC has no direct authority over other agencies to oversee or impose NRC requirements, it does have the obligation to the public and assure nuclear plant safety from potential external hazards. This is clearly articulated in 10 CFR 100 and other regulations. In this case, if the NRC believed there was a risk and that the licensee provided false information, the NRC had the authority to withhold its approval provided to FERC on November 7, 2014.***

***The switchyard and the transmission lines are outside the NRC's "regulatory authority" yet they still impose strict requirement of these systems. The weather and climate are also outside the NRC control yet the NRC has requirements based upon weather conditions such as hurricanes, tornadoes and flooding. The NRC has exerted control over chemicals in the vicinity and issued requirements controlling the impact of these chemicals on nuclear facilities. See LES study on the fuel fabrication facility in New Mexico and the Information Notice on Fort Saint Vrain in Colorado. The issuance of RG 1.78 and RG 1.91 clearly state the plants must be protected against outside forces and/or delegate this responsibility to other agencies without some type of agreement or MOU.***

***The State of Maryland and the NRC required a detailed analysis of the LNG plant in the vicinity of the Calvert Cliff plants.***

***The NRC has the ability to require the licensee to require subcontractors to meet certain safety and Quality Assurance requirements (10 CFR 50 Appendix B), especially given that these gas lines are located on the licensee's property. It***

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Comments and Questions on  
NRC Letter of 11/6/2015

*is not that the NRC doesn't have the authority, more that it is not imposing its requirements.*

*An example of an area of risk that the NRC totally ignored and is required by 10 CFR 50 Appendix A and numerous Regulatory Guides is Control Room Habitability. These regulations require an assessment and protection against of toxic or explosive gas in the control room. The NRC has ignored this problem since initial plant licensing. <sup>1</sup>Should a gas leak occur, natural gas may migrate into the control room and other buildings, exploding with no detection or isolation that may disable the entire control room staff.*

*The NRC has the clear authority to require the licensee to sanction a truly independent safety and risk assessment but despite many calls for this assessment with clear evidence of why they are needed, the NRC, continues to ignore these requests.*

*Question #1*

*Why is the NRC ignoring its requirements by not assuring compliance with its regulations such as 10 CFR 50.72, 10 CFR 100, 10 CFR 50 Appendix A and B, 10 CFR 50.5, 50.9 and Regulatory Guides for the protection of the control room and personnel?*

*Question #2*

*It appears that the NRC cites the other regulatory agencies to infer that one of them may have done the risk assessment. Does the NRC have a valid risk assessment of the siting of the pipeline at Indian Point that was performed by any of those agencies?*

P. Blanch -2

Throughout the PRB review of your petition, the supplemental letters, and your presentations before the PRB, you focused repeated attention on a number of issues. The PRB would like to summarize its findings on the following items:

Inaccurate and Incomplete 50.59 Site Hazards Analysis

The original petition of October 15, 2014, requested violations of 10 CFR 50.59, 50.9, and Appendix B to 10 CFR 50 for providing inaccurate and incomplete information in the 50.59 site hazards analysis. In addition, you requested a Demand for Information seeking an explanation as to why the previous violations do not also constitute a violation of 10 CFR 50.5, "Deliberate Misconduct."

Enclosure  
Comments and Questions on  
NRC Letter of 11/6/2015

The NRC staff thoroughly reviewed the licensee's 50.59 site hazards analysis and the results of that review were documented in the Region I inspection report dated November 7, 2014 (ADAMS Accession No. ML 14314A052). As indicated in the inspection report, the staff determined that Entergy's conclusions involving the potential rupture of the proposed pipeline poses no threat to the safe operation of the plant or safe shutdown of the plant, are reasonable and acceptable, and are also comparable with the staff's independent confirmatory analysis. In addition, staff reviewed the qualifications and resume of Entergy's contractor who performed the licensee's analysis and determined that the individual possessed the requisite knowledge, experience, and abilities to conduct the pipeline hazards analysis and that the analysis had been conducted in accordance with approved procedures.

Therefore, the NRC staff does not agree with your assertions that the licensee's 50.59 site hazards analysis was inaccurate and incomplete and that the contractor performing their blast analysis was not qualified to Entergy's Appendix B Quality Assurance Program. As a result, no enforcement actions will be taken against Entergy.

***The NRC personnel, while well qualified to address nuclear issues, have no documented experience in gas line dynamics. I alleged in my 10 CFR 2.206 petition that the licensee clearly violated 10 CFR 50.5 and 50.9 by providing inaccurate, false, and possibly willful misconduct information to the NRC. The NRC does not dispute this fact and because the NRC determined it was not "material" totally ignores my claim of clear regulatory violations. "No blood, no foul!" The issue the NRC refuses to investigate reflects upon the trustworthiness of Entergy and the false information Entergy has provided to the NRC.***

***The NRC and the State of Vermont did not ignore the false statements made by Entergy when they orally stated there were no buried pipes at Vermont Yankee.***

***The NRC has the clear authority to require the licensee to sanction a truly independent and transparent safety and risk assessment, but despite many calls for this assessment, the NRC continues to ignore these requests.***

***On September 11, 2015 Mr. Pickett and Mr. Beasley assured me the NRC would investigate the alleged inaccurate information provided to the NRC by Entergy.***

***Question #3***

***Why does the NRC Office of Investigation continue to refuse to investigate this allegation as required by Management Directive 8.8?***

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***Question #4***

***What has the NRC found, to date, in its investigation of the alleged inaccurate information proved to the NRC by Entergy?***

Assumed 3 Minute Isolation Valve Closure Time for the Proposed Spectra Pipeline

Based on information included in Spectra Energy's application to FERC, Entergy's site hazards analysis assumed that remote plant operators located in Houston, TX, would be able to recognize a pipe rupture from pressure sensors located in the pipeline and take appropriate actions to close the pipeline isolation valves within 3 minutes of a major pipe rupture. You characterized this assumption as a material false statement.

Due to concerns regarding the significance of the assumed valve closure time, the NRC staff performed a bounding sensitivity analysis. The staff's sensitivity analysis consisted of two cases. First, the staff considered the case when the isolation valves are assumed to close within the time specified by Spectra Energy (3 minutes). Second, the staff assumed the release of gas for a full hour with the unbroken end of pipe connected to an infinite source. The resulting pressure pulse and heat flux values are only marginally different from one another and, in both cases, showed that equipment relied on to safely shut down the facility would remain available and operable. Therefore, the staff concluded that valve closure times do not have a

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significant impact on the site hazard analysis, and the licensee's assumption of a 3 minute valve closure time does not have a material impact on that analysis.

***We continue to disagree as to whether the statement about the isolation time is material or not. We do agree that it is not realistic. The history of gas line accidents completely contradicts this false assumption. The NRC does not disagree that this statement is inaccurate or willful, yet refuses to have this investigated as required by the NRC's Management Directive 8.11.***

***The bounding analysis is inconsistent with the guidance of RG 1.91.***

***As Richard Kuprewicz of Accufacts stated regarding the 3-minute valve closure case and the second assumption that the upstream side of the ruptured pipe is connected to an infinite source of gas for 1 hour," "This NRC statement is meaningless and does not permit an independent evaluation that the parties performing such a potential impact analysis understand the***

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***extremely high transient rupture gas rates and very high heat fluxes that can be released on this pipeline system at this site. For example, a three minute closure time does not indicate how long the gas has been releasing (at incredibly high rates) out of a pipeline rupture on this specific system at this location before valve and, ironically, after valve closure. The NRC assumption also appears not to consider that gas release even with closed valves will continue at very high rates for a considerable period of time. A transient graph of mass release versus time will indicate a characteristic gas pipeline rupture fingerprint form that will dispel any attempts to quickly remotely identify, much less actually trigger, valve closure even for automatic valves. Such a graph will also reveal the case irrelevancy of a ruptured pipeline connected to an infinite source of gas for one hour in the matter of this safety analysis."***

**Question #5**

***Does the NRC plan to investigate the inaccurate information it is basing its assessment of no increased risk from the pipeline?***

Request for an Independent Risk Assessment Including a Transient Risk Analysis

The NRC, an independent regulatory agency, prepared its own independent confirmatory analysis of the effects on safety related equipment resulting from a postulated pipeline rupture and the results were comparable to those submitted by the licensee. For the evaluation of the explosion hazard, the NRC staff used the peak gas release rate resulting from a pipe rupture to estimate the mass of natural gas that would be available. This approach predicts more gas released than other approaches like a time dependent gas release or a release averaged over time.

The conservative, bounding analysis prepared by the NRC staff postulates more severe results than a transient analysis. A transient analysis averages the release of gas over time and the release rate would gradually decline. As described above, the NRC analysis assumed that the maximum release rate was sustained and did not decline in the manner that a transient analysis would predict. This conservative approach assumes more gas is available to explode than in a transient analysis, and produces results that bound more detailed analyses, such as a transient analysis.

Considering that the NRC's independent analysis is conservative and bounding, the NRC concludes there is no need for another NRC sponsored independent analysis.

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***The Chairman inferred on March 24, 2015 that the NRC only performed a confirmatory analysis and the above appears to contradict this by stating the NRC conducted its own “NRC independent analysis.” The Chairman also stated that RG 1.91 does not address vapor cloud explosions. This is not an accurate statement as RG 1.91 specifically addresses vapor clouds.***

***Question #6***

***Which of these statements is true?***

The NRC Should Withdraw its Findings to the Federal Energy Regulatory Commission

You have requested that the NRC withdraw its findings to FERC that the proposed pipeline would not present an unacceptable risk to the Indian Point facility. The staff has performed a thorough review of Entergy's 50.59 site hazards analysis and has performed its own independent confirmatory analysis that is in agreement with the licensee's results. The NRC has no basis to withdraw its previous conclusions to FERC.

Follow-up Questions from the PRB Presentation of July 15, 2015

During your second presentation before the PRB on July 15, 2015, the PRB agreed to respond to your follow-up questions. Your letter of July 27, 2015, included a list of 39 questions. We have responded to your questions in the enclosure.

In summary, the NRC's role in the proposed natural gas pipeline is limited to its regulatory authority of ensuring the safe operation of the Indian Point operating facility. Based on the review of Entergy's 50.59 site hazards analysis and the NRC's **independent calculation** results using conservative assumptions and rationale, the staff has determined that Entergy has appropriately concluded that the proposed pipeline does not introduce more than minimal additional risk to the Indian Point facility and, therefore, the change in the external hazards analysis associated with the proposed pipeline does not require prior NRC review and approval.

***Again reference to the “NRC’s independent calculation.”***

***Question #7***

***Is a copy of this available? I, and others have filed FOIA requests for this calculation and received a response the calculation can’t be located.***

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The NRC appreciates your concerns and will continue to evaluate all new information regarding the existing and proposed natural gas pipelines through the Reactor Oversight Program.

Sincerely,

Christopher G. Miller, Director Division of  
License Renewal Office of Nuclear Reactor  
Regulation

Docket Nos.: 50-247 and 50-286

Enclosure As  
stated



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PETITIONER QUESTIONS RELATIVE TO

PETITION REVIEW BOARD MEETING OF JULY 15, 2015

INDIAN POINT PROPOSED NATURAL GAS PIPELINE

The petitioner's letter dated July 27, 2015, grouped questions together according to subject area. Each group of questions was preceded by a preamble. For the purpose of clarity, the preamble has been italicized followed by each question and the NRC staff's response.

*Freedom of Information Act (FOIAJ Requests)*

*FOIA response #1 (ADAMS Accession No. ML 15061A219 contains a summary and handwritten calculations that are not signed, dated, approved, reviewed, etc. Furthermore, an arbitrary and undefined term is added to the equation "Y" that results in a conclusion that grossly underestimates Potential Impact Radius (PIR), therefore the risk to the public.*

*FOIA response #2 (ADAMS Accession No. ML15247A108) contains an email from David Beaulieu dated April 27, 2015 (ADAMS Accession No. ML 15274A108), which discusses gas pipeline dynamics. The information in this email directly contradicts the information provided to FERC by the NRC in its confirmatory analysis used in its approval of the Spectra Algonquin Incremental Market (AIM) project. This internal NRC email primarily addresses the operator response times and the amount of gas that will be released during a rupture. The gas release rate according to this email is close to one million pounds of gas per minute and likely to continue for hours. The result is that the NRC contradicts its own guidance (Regulatory Guide 1.91) for measuring (PIR) and clearly contradicts both the Entergy and the NRC analysis.*

*We now know from the NRC email of April 27, 2015 that the volume of gas and the amount of time it would take to terminate the gas flow totally undermine the public confidence that Entergy and the NRC are properly operating and regulating the plant. Moreover, because the blast radius, heat flux and vapor clouds effects are very likely underestimated. A long term Station Blackout (SBO) may result. Additionally we are now aware that the fuel oil tanks likely contain flammable material that has not been considered in any analysis.*

*The ramifications of these undocumented calculations and alleged material false statements are so grave that the NRC must rescind its approval of the pipeline because FERC based its approval of the Spectra AIM project on the alleged material false statements made to the NRC by Entergy in its analysis dated August 21, 2014 until a truly independent risk analysis is conducted.*

*The NRC provided its final analysis and approval to FERG in its inspection report dated*

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*November 7, 2007. The NRC personnel participating in this inspection have no documented experience in gas line accidents. In fact, the NRC's primary contributor, Mr. Tammara, has no documented experience in gas rupture dynamics or experience with other events such as the San Bruno and other major gas line catastrophes and was not a member of the team conducting the inspection.*

*Mr. Richard Kuprewicz, a nationally recognized pipeline expert, and others have requested that the NRC endorse an independent, transparent, thorough risk assessment by recognized experts. The public and elected officials, including Senators Charles Schumer and Kirsten Gillibrand and Congresswoman Nita Lowey have also made this request, yet the NRC continues to stand by its confirmatory analysis of November 7, 2014 and refuses any consideration of any independent risk analysis by experts with documented credentials.*

*After the second presentation to the Petition Review Board, Mr. Richard Kuprewicz wrote to NY Assemblywoman Sandy Galef with a suggested plan for a transient risk analysis "that incorporates the true transient nature of a pipeline rupture capturing the extremely high change in gas rate release with time that reflects the tremendous extremes of a gas transmission pipeline rupture, especially on a 42-inch high pressure pipeline." Mr. Kuprewicz's plan could form the basis for the portion of the independent risk assessment.*

*Entergy, in its 10 CFR 50. 59 analysis, stated that a rupture of the existing buried gas pipeline due to sabotage was not considered in the 2008 risk study conducted by Mr. David Allen that evaluated the potential terrorist threat to the exposed portions of the existing gas lines. Mr. Art Burritt of the NRC confirmed that failure of the existing gas pipeline may impact safety related Structures, Systems and Components (SSCs) at Indian Point located within 400 feet of these SSCs. This is an unanalyzed condition that requires immediate NRC attention. 10 CFR 50. 72 requires reporting of this potential event within 8 hours, yet the NRC has not taken any visible actions to address this issue after more than four weeks while the plants continue to operate in an unanalyzed condition.*

#### Questions

1. Please identify the missing information in FOIA document 1, including the date, author, approval chain, reviewers and the NRC's procedure for conducting safety related calculations.

#### Response

The NRC continues to withhold certain information in FOIA document 1 due to its security sensitive nature. The qualifications of the individual who performed the calculation are described in NRC Inspection Report 05000247/2014004 and 05000286/2014004 dated November 7, 2014(ML14314A052). The calculation in FOIA document 1 was performed to support the above inspection and

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received an independent peer review within the NRC.

The NRC does not perform "safety-related calculations." Therefore, the NRC staff does not have specific procedures for performing calculations used to support inspections or to perform confirmatory analysis. The term, "safety related calculations" implies formal calculations performed by licensees for the design of NRC regulated facilities. Safety-related calculations by licensees must be performed in accordance with approved plant procedures and associated quality control. Calculations performed by the staff do not require the same level of documentation and are performed as needed to support independent confirmatory analysis.

***As clearly stated in your letter above , "Based on the review of Entergy's 50.59 site hazards analysis and the NRC's independent calculation" and in your answer to question 12 below and stated elsewhere, the NRC did conduct an independent calculation that impacts the safety of Indian Point. The NRC here claims it withheld information related to the names, dates, approval, etc. The FOIA response did not identify this information as being withheld.***

***Additionally, a document received on December 2, 2015, 2016-0098, from the NRC in response to another FOIA request, includes the "peer-review" of the NRC's "confirmatory analysis." This peer-review was conducted by Mr. Hollcroft and it mistakenly refers to an LNG pipeline. The Spectra AIM pipeline is a natural gas pipeline and not a liquefied natural gas pipeline. Therefore, this analysis must be negated.***

***Further, when looking at the mitigation of the pipeline segment near Indian Point, Mr. Hollcraft states, "I am not a risk engineer so I cannot definitely say whether their PRA methodology is in keeping with regulatory guidance and is acceptable for this 50.59 evaluation."***

***The NRC's supposedly independent "peer-reviewed confirmatory analysis" must be negated because the persons performing and verifying this analysis do not possess the proper skill set to evaluate the consequences of a natural gas pipeline rupture.***

***Question #8***

***Why would the NRC withhold the date, author, signature, by***

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***claiming this information is of a "security sensitive nature.  
(ML15331A342)***

***Question #9***

***Specifically which individual or committee in the NRC determined that having someone who states "I am not a risk engineer so I cannot definitely say whether their PRA methodology is in keeping with regulatory guidance and is acceptable for this 50.59 evaluation." should be responsible for the peer-review of this critical situation that can impact the lives of 20 million people and the economy of the U.S.?***

2. In FOIA document 1, the NRC in its risk calculation modifies equation #1 of RG 1.91 by inserting an undefined term "Y". What is this undefined term and why was it used? Its impact may be significant.

Response

NRC Regulatory Guide (RG) 1.91, "Evaluations of Explosions Postulated to Occur at Nearby Facilities and on Transportation Routes Near Nuclear Power Plants," describes methods that the NRC staff finds acceptable for evaluating postulated explosions at nearby facilities and transportation routes. The NRC did not modify any of the equations in RG 1.91 as part of its confirmatory analysis.

Equations (3) and (4) of RG 1.91 explains how TNT equivalent, WTNT, is determined and how equation (1) is used to determine the maximum distance from an explosion where an overpressure of 1.0 psi [pounds per square inch] is predicted to exist. Specifically:

RG 1.91  
Equation (3)

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NRC Regulatory Guide (RG) 1.91, "Evaluations of Explosions Postulated to Occur at Near Facilities and on Transportation Routes Near Nuclear Power Plants," describes methods that the NRC staff finds acceptable for evaluating postulated explosions at nearby facilities and transportation routes. The NRC did not modify any of the equations in RG 1.91 as part of its confirmatory analysis.

Equations (3) and (4) of RG 1.91 explain how TNT equivalent,  $W_{TNT}$ , is determined and how equation (1) is used to determine the maximum distance from an explosion where an overpressure of 1.0 psi [pounds per square inch] is predicted to exist. Specifically:

$$E = \alpha \Delta H_c m_F \quad \text{RG 1.91 Equation (3)}$$

where

$E$ =blast wave energy  
 $\alpha$ =yield (i.e., the fraction of available combustion energy participating in blast wave generation)  
 $\Delta H_c$ =theoretical net heat of combustion  
 $m_F$ =mass of flammable vapor released

$$W_{TNT} = E / 4420 \text{ kJ/kg} \quad \text{RG 1.91 Equation (4)}$$

$$W_{TNT} = \alpha \Delta H_c m_F / 4420 \quad \text{Combining (3) and (4)}$$

The yield factor,  $\alpha$ , included in Equation (3) is designated as "Y" in the NRC confirmatory calculation found in FOIA document 1 (ADAMS Accession No. ML15061A219). This is consistent with the methodology of RG 1.91 without any modifications to equation (3). Table 1 of RG 1.91 provides suggested yield factors and, for methane, 5% (0.05) is used.

***Table 1 of RG 1.91 lists three different yield factors ranging from 5% to 15%. The NRC calculation provides no justification for the use of 5%, in fact recommends using the most conservative value of 15%. Plant Vogtle calculated a TNT equivalent of 56,165 pounds of TNT with a blast radius of 1723 feet. (ML071800270). Using the NRC numbers of 376,000 kg/minute of gas release, my calculations estimate a blast radius exceeding 4000 feet, yet according to the NRC, the predicted blast radius for the 42" diameter AIM pipeline is less than 1200 feet. Turkey Point is another example of a calculated blast radius of 3097 feet with less than 10 times the TNT equivalent.***

**Question #10**

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***I am willing to meet with the NRC and discuss our different results from the same equation. Would the NRC be willing to have a public meeting to discuss?***

3. Please provide the specific qualifications of the personnel conducting the inspection that provided the basis for the approval of the AIM project to FERC on November 7, 2014.

Response

NRC Inspection Report 05000247/2014004 and 05000286/2014004 dated November 7, 2014 (ADAMS Accession No. ML 14314A052), identifies the inspectors who performed the inspection. All NRC inspectors must complete a rigorous qualification program that demonstrates that they possess the knowledge and skills necessary to effectively perform regulatory activities in their position. The knowledge and skills can be obtained through previous experience, formal training, study activities, and on-the-job training activities. Upon completion of the qualification program, the employee must pass an oral qualification board to confirm that the individual can integrate and apply agency, office, and position-specific competencies to actual situations. Inspector qualifications are continually maintained and enhanced through post-qualification and refresher training to ensure that the NRC has the skills needed to fulfill its mission.

***This statement by the NRC is accurate and the NRC inspectors conducting the inspection, used as the basis for the approval of the entire AIM project, had no experience with design, construction, operation, or gas line rupture dynamics. Mr. Hollcroft himself stated that he is “not a risk engineer” and “cannot say whether the PRA methodology is in keeping with regulator guidance and is acceptable for this 50.59 evaluation.” The lives of 20 million people are at stake and the NRC’s personnel do not possess the field experience to accurately assess the consequences of a gas pipeline rupture at this sensitive location.***

**Question #11**

***I have reviewed the qualifications of the personnel conducting the inspection. Do any of these persons have the necessary qualifications or experience with risk analysis for gas line malfunctions?***

4. In FOIA document 2 (ADAMS Accession No. ML 15247A108), the NRC

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stated that the PIR [potential impact radius] would not be significantly impacted should the gas release continue for one hour instead of 3 minutes. Equation #1 of Regulatory Guide 1.91, that calculates the blast radius, directly contradicts this statement and predicts the PIR will be increased by a factor of 2.71 with a new PIR of about 3000 feet. How can the NRC ignore its own primary guidance?

Response

The NRC has not ignored its own primary guidance. Equation (1) of Regulatory Guide 1.91 states:

$$R_{min}=Z * W^{1/3}$$

Where  $R_{min}$  = distance from explosion where pressure equals 1 psi  
Z = conversion factor (a constant) W = equivalent tons of TNT

The NRC used the ALOHA code to determine the equivalent tons, W, to use in Equation (1) above. The ALOHA code recognizes that the bulk of the gas released would dissipate due to turbulence and buoyancy and would not be available for an explosion. Predicting an increase of the PIR by a factor of 2.71 is a misapplication of Equation (1) of RG 1.91. This misapplication increases W by a factor of 20 to account for a full hour release rather than 3 minutes. The factor of 2.71 is obtained by taking the cube root of 20. This approach is not realistic, ignores the buoyancy of natural gas and dissipation from turbulence, and assumes that natural gas will accumulate for a full hour and remain available for an explosion.

***The Chairman clearly stated to Congresswoman Lowey on March 24, 2015 that ALOHA was only used to estimate the amount of gas released from a rupture. This number is 376,000 kg/min of natural gas or many tons equivalent of TNT.***

***If one reviews RG 1.91, used specifically for vapor cloud distance, there is no mention or discussion of "buoyancy."***


***Based on my calculations from RG 1.91 and the gas release rate provided by the NRC, the damaging blast radius exceeds 8000 feet which is consistent with similar calculations reviewed and approved by the NRC for Turkey Point, Plant Vogel, Calvert Cliffs, Fort Saint Vrain and the proposed uranium enrichment facility in Eunice, New Mexico.***

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**Question #12**

***Please explain why there are different results between the above facilities and the results for Indian Point. A calculation supplied under FOIA performed by Mr. Tammara uses ALOHA to predict the blast radius and assumes the wind direction from the East. This is away from the plant rather than the required conservative assumption. Was ALOHA or RG 1.91 used to calculate the blast radius?***

***See ALOHA output results below.***

ALOHA® 5.4.1 

Text Summary

---

**SITE DATA:**  
 Location: KINGSTON, NEW YORK  
 Building Air Exchanges Per Hour: 0.50 (enclosed office)  
 Time: June 21, 2013 1200 hours EDT (user specified)

**CHEMICAL DATA:**  
 Chemical Name: METHANE Molecular Weight: 16.04 g/mol  
 TEEL-1: 3000 ppm TEEL-2: 5000 ppm TEEL-3: 25000 ppm  
 LEL: 44000 ppm UEL: 165000 ppm  
 Ambient Boiling Point: -258.8° F  
 Vapor Pressure at Ambient Temperature: greater than 1 atm  
 Ambient Saturation Concentration: 1,000,000 ppm or 100.0%

**ATMOSPHERIC DATA: (MANUAL INPUT OF DATA)**  
 Wind: (b)(7)(F) from E at 3 meters  
 Ground Roughness: open country Cloud Cover: (b)(7)(F)  
 Air Temperature: (b)(7)(F)  
 Stability Class: (b)(7)(F)  
 No Inversion Height Relative Humidity: (b)(7)(F)

**SOURCE STRENGTH:**  
 Flammable gas escaping from pipe (not burning)  
 Pipe Diameter: 42 inches Pipe Length: (b)(7)(F)  
 Unbroken end of the pipe is connected to an infinite source  
 Pipe Roughness: smooth Hole Area: (b)(7)(F)  
 Pipe Press: 850 psia Pipe Temperature: (b)(7)(F)  
 Release Duration: ALOHA limited the duration to 1 hour  
 Max Average Sustained Release Rate: (b)(7)(F)  
 (averaged over a minute or more)  
 Total Amount Released: (b)(7)(F)

**THREAT ZONE:**  
 Threat Modeled: Overpressure (blast force) from vapor cloud explosion  
 Type of Ignition: ignited by spark or flame  
 Level of Congestion: uncongested  
 Model Run: Gaussian  
 Red : LOC was never exceeded --- (8.0 psi = destruction of buildings)  
 Orange: LOC was never exceeded --- (3.5 psi = serious injury likely)  
 Yellow: LOC was never exceeded --- (1.0 psi = shatters glass)

**THREAT AT POINT:**  
 Overpressure Estimate at the point:  
 Downwind: (b)(7)(F) Off Centerline: 0. feet  
 Overpressure: (b)(7)(F)

5. Will the NRC agree to an independent risk assessment prior to allowing any further construction on the project and any further disturbance to land? The composition of the team conducting the independent risk assessment must include nuclear and gas experts and there must be representation of stakeholders, including the public and impacted residents, as well as local, state and federal elected officials. The NRC may elect to be a part of this risk analysis team.



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Response

The NRC does not have the authority to allow or reject the construction of this project. The NRC's role was, and is, to ensure that the licensee of the Indian Point facility adequately assessed the safety implications of the proposed pipeline at the nuclear site, as well as to determine if the licensee's analysis met the NRC's requirements regarding plant changes. The NRC found that the licensee adequately addressed the safety implications and that the proposed pipeline poses no threat to the safe shutdown of the facility. That having been said, the NRC, an independent government agency, performed its own independent confirmatory analysis of a potential rupture of the proposed natural gas pipeline and whether it would affect the safe operation of Indian Point. The analysis was conservative and bounding. The results of the NRC's analysis were similar to that obtained by Entergy's contractor, The Risk Research Group, Inc., and confirmed that a breach of the proposed natural gas pipeline will not prevent an orderly safe shutdown of the Indian Point facility. The staff does not believe that additional analyses of the proposed pipeline are necessary.

***The very first line of this statement “The NRC does not have the authority to allow or reject the construction of this project” is a misleading play on words. . According to a FOIA from FERC, it approved the project based solely on the approval provided to FERC in the NRC’s inspection report of November 7, 2014.***

***Mr. Kuprewicz and I strongly disagree with the NRC findings and would welcome an open discussion to discuss our differences of opinions.***

**Question #13**

***The NRC does have the authority to require Entergy to provide assurance of public safety and impose requirements on vendors working on Entergy property. Shortly after 9/11 the NRC imposed requirements for all nuclear plants to maintain a “stand-off” distance from the plants and waterways. Why did the NRC have this authority at that time and not now?***

6. When will the NRC conduct a thorough safety analysis of the existing 63-year old buried pipeline, which by Mr. Burritt's own admission, this failure is likely to impact vital structures without any documented analysis?

Response

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The NRC and its predecessor, the Atomic Energy Commission (AEC), have conducted a thorough safety analysis of the existing natural gas pipelines multiple times. Each time, the NRC or AEC staff concluded that the failure of the existing gas pipelines will not impair the safe operation or shutdown of the Indian Point facility.

***FOIA requests have been filed for this information and at this time, responses have not been received. During the early stages of operation the automatic closure valves were removed without any analysis.***

***Question #14***

***I have reviewed all of these analyses and most cited automatic gas isolation valves. The valves and their removal were not analyzed or documented. The 1982 Indian Point Safety Study was conducted after these valves were removed, yet assumed they were operational. Why are the two buried gas lines, in close proximity to the control room, ignored in every one of these studies?***

Among the many analyses documented are the AEC's Safety Evaluation Report, issued on September 21, 1973 (ADAMS Accession No. ML072260465), which stated on p. 2-4 that: "Two natural gas lines cross the Hudson River and pass about 620 feet from the Indian Point 3 containment structure. Based on previous staff reviews, failures of these gas lines will not impair the safe operation of Indian Point 3." The previous staff reviews were the NRC's review of the Preliminary Safety Analysis Report, submitted by Consolidated Edison on August 30, 1968 (ML093480204).

***This may be an accurate statement however it appears to be intentionally misleading. We agree that a gas line explosion would not impact the function of the containment, however, most vital structure are located closer than 620 feet. For example, from publically available detailed site layout drawings, it can be seen that the control room is less than 400 feet from the gas line. The control room has a direct path to the outside environment and no protection against natural gas ingress. Again, I believe this to be a violation of NRC Regulations and guidance. Both of the above studies assumed the closure of the automatic isolation valves that are no longer present.***

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**Question #15**

***Why would these cited studies ignore vital structures located closer than 620 feet?***

**Question #16**

***Were these valves removed with a license amendment or a 50.59 analysis? Please provide a copy of Entergy's analysis removing this vital safety feature or advise if I need to file a FOIA request for this information.***

**Question #17**

***How can the NRC believe that the plant is safe from a rupture of the existing pipelines if the valves have been removed?***

On December 6, 1995 (ADAMS Accession No. ML 11227A100), the licensee submitted the Individual Plant Examination of External Events (IPEEE) report for Indian Point. In this report, the licensee first evaluated any susceptibility to damage from seismic events. Based on a hazard analysis, the licensee concluded that the probability of occurrence was low enough that the pipelines could be screened out as a seismic vulnerability. The licensee next considered pipeline failures from other causes, such as an inadvertent overpressure condition. Although the licensee concluded there is a small probability that conditions could exist that would cause damage to Indian Point Unit 3, it screened this scenario out from further consideration based on the low probability of the scenario. The NRC's staff evaluation report of the Indian Point Unit 3 IPEEE did not identify any deficiencies with this approach.

***Good answer, however I did not question the response of the gas lines to any seismic event.***

**Question #18**

***Why did the IPEEE ignore the buried gas pipelines?***

***In April 2003, NRC staff undertook a review of the possible consequences of a rupture of a pipeline, independent of the probability of a pipeline failure. The staff concluded that for a large rupture and resulting fire, safety-related structures would not be significantly affected. With respect to potential fires, the effects are limited to possible ignition of flammable materials***

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***such as wood, as well as injury of exposed on-site personnel (principally skin burns). For the one scenario that might damage safety-related structures (the explosion of a large unconfined vapor cloud), the staff concluded that the factors needed to achieve an explosion creating sizeable overpressures make the probability for occurrence very low.***

In 2008, the licensee contracted another evaluation of the pipelines. In an evaluation dated August 14, 2008, the contractor evaluated three scenarios based on a simultaneous rupture of both pipelines; a jet fire, a vapor cloud flash fire, and a large vapor cloud explosion. The NRC reviewed this analysis and concluded that failures of these gas pipelines will not impair the safe shutdown of Indian Point.

***According to Mr. Art Burritt, these studies did not consider a potential leak or rupture of the existing 63 year old buried pipelines running adjacent to the vital structures but only considered malicious actions of the exposed pipelines located 800 feet from Unit 3.***

**Question #19**

***Why didn't these studies consider a potential leak or rupture of the existing 63 year old buried pipelines adjacent to the vital structures?***

*Pipeline Integrity*

*The NRC Petition Review Board stated in a letter dated April 28, 2015 to me: (ADAMS Accession No. ML 15124A027). "The pipeline isolation valves are constructed under criteria developed by the U.S. Department of Transportation (DOT). Therefore, the petitioner's concerns regarding the safety class of the isolation valves should be directed to DOT." The NRC has no authority to delegate nuclear safety to the DOT. The operations, integrity, and inspections of these valves are partially designed "to prevent or mitigate the consequences of accidents which could result in potential offsite exposures" to the environment and are therefore safety related. See 10 GFR*

*50.2 below.*

***10 CFR 50.2 Definitions***

*Safety-related structures, systems and components means those structures, systems and components that are relied upon to remain functional during and following design basis events to assure:*

*(1) The integrity of the reactor coolant pressure boundary*

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*(2) The capability to shut down the reactor and maintain it in a safe shutdown condition; or*

*(3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in § 50.34(a)(1) or § 100.11 of this chapter, as applicable.*

Questions:

7. How will the NRC assure nuclear safety and impose NRC Regulations on the design and construction of the proposed AIM project?

8. How will the NRC assure that the valves, piping, control systems and leak detection systems and other vital components meet the following NRC Regulations:

- Quality Assurance Redundancy Environmental Qualification In-Service-1 inspections
- ASME codes
- Technical Specifications Emergency response Operator training
- Other NRC Regulations for safety related components

Response to Questions 7 and 8

The NRC does not have the regulatory authority to impose its requirements on natural gas pipelines. A complex interstate natural gas pipeline expansion such as this requires the involvement of a number of Federal and State government agencies all having their distinct responsibilities. Other Federal government agencies involved in the proposed Spectra Energy gas pipeline expansion include: (1) the Federal Energy Regulatory Commission, which is responsible for evaluating applications for authorization to construct and operate interstate natural gas pipeline facilities, (2) the Pipeline and Hazardous Materials Safety Administration of the Department of Transportation, which is responsible for administering the national regulatory program to ensure the safe transportation of natural gas, petroleum, and other hazardous materials by pipeline, (3) the Environmental Protection Agency, which is responsible for protecting human health and safeguarding the natural environment, (4) the

U.S. Army Corps of Engineers, which regulates any work or structures that potentially affect the navigable capacity of a waterbody, (5) the National Oceanic and Atmospheric Administration's National Marine Fisheries Service, and (6) the U.S. Fish and Wildlife Service. The design and construction of the proposed pipeline will be performed in accordance with the applicable regulations found in Title 49 of the *Code of Federal Regulations* administered by the Pipeline and Hazardous Materials Safety Administration within the Department of Transportation. Therefore, the NRC will not perform a review of the proposed pipeline, and there will be no attempt to impose NRC regulations on the design and construction of the pipeline.

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The NRC's role with respect to the proposed pipeline is limited to ensuring the safe operation of the Indian Point facility. In this regard, NRC regulations required the licensee to perform a site hazards analysis to determine the safety impact of the proposed pipeline. Entergy performed this analysis and submitted it for public inspection on August 21, 2014 (ADAMS Accession No. ML 14253A339). The Entergy analysis concluded, and the NRC independently confirmed, that the proposed pipeline will not impair the safe operation or shutdown of the Indian Point facility.

***I agree that the NRC has no control over the actions and authority of other Federal and State agencies however, the NRC provided approval to FERC for the construction of the AIM pipeline based on knowingly false information provided to the NRC by Entergy. At this date, the NRC has not initiated any type of investigations either by the Office of Investigations or the Inspector General. The Entergy analysis clearly contains inaccurate statements; a clear violation of NRC Regulations as discussed in my 10 CFR 2.206 petition that has been rejected. Please keep in mind that the mission of the NRC is "Protecting the Public and the Environment" and not protecting the nuclear plant licensees.***

**Question #20**

***Does the NRC have any plans to initiate the allegations of inaccurate information as described in my 10 CFR 2.206 petition?***

**Question #21**

***Now that the NRC knows that its confirmatory analysis and peer-reviewed analysis are based on false information and defy the basic laws of thermodynamics, are inconsistent with federal regulations, are based on a modeling system that is prohibited for a pipeline rupture in this configuration, and that the NRC does not have the expertise to properly evaluate the consequences of a pipeline rupture of a 42" diameter, high-pressure pipeline at this location, that puts in jeopardy the lives of 20 million people and the economy of the U.S., why wouldn't the NRC notify FERC and rescind its prior statement that the siting of the pipeline alongside Indian Point is safe?***

*Valve closure time*

*Entergy, in its analysis, stated the gas flow would be terminated within 3 minutes, should a rupture occur. I believe this to be a material false*

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*statement.*

*The Entergy 10 CFR 50.59 safety evaluation confirmatory analysis (EN-L/-101ATT9.1, Rev.11) states:*

*The existing pipeline automation and control system, which would be used for the proposed new 42-inch pipeline near IPEC [Indian Point Energy Center], does not provide for an automatic isolation of the closest upstream and downstream mainline valves upon the detection of a pipeline rupture.*

*The two closest actuated valves are located at milepost 2.61 on the west side of the Hudson River and at milepost 5.47 just east of IPEC. They would require an operator to take action to close these valves. The system, however, is monitored 24 hours a day and an alarm would immediately alert the control point operator, located in Houston, Texas, of an event and isolation would be initiated. This would result in all of the gas between these valves at the time of closure being able to vent or burn. The estimated time to respond to the alarm (less than one minute) and the closure time of the valves (about one minute) was used as the basis for an assumed closure time of three minutes for the analysis performed in the attached report."*

*In the email of April 27, 2015 (FO/A document 2) from David Beaulieu to NRC staff, including Mr. Douglas Pickett, the premise for the 3-minute timeframe for remote valve closure was re-evaluated. It concurs with Mr. Kuprewicz's statement during the first petition review call on January 28, 2015, that a pressure drop may not be identified right away. The Beaulieu email cites a report from the Oak Ridge National Laboratory, "The time between a pipeline break and RCV closure can vary from about 3 minutes for immediate leak or rupture detection to hours if field confirmation of the break is necessary to validate the closure decision."*

*The NRC based its recommendation to FERC on the 3-minute remote closure time. This NRC internal document is more than sufficient to grant my petition as it substantiates the submission of information contrary to the requirements of 10 CFR 50.9.*

*Mr. Kuprewicz reviewed the FOIA documents in preparation for the PRB call and wrote an email to me on July 14, 2015 in which he stated:*

*Rupture will always be a full bore rupture, releasing at both ends of the open pipes as the fracture mechanics forces throw tons of buried pipe steel out of the ground yielding very large craters (the location of the rupture at these pressures should be performed at a site nearest the plant).*

*The location of the rupture so close to an upstream compressor station will mask pressure loss indications for quite some time, as mass release*

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*significantly exceeds the flow rate in the pipeline before rupture. Pressure loss indication will not be the primary indicator of a pipeline rupture for quite some time.*

*Right now I believe, very high heat fluxes will be the most likely scenario that may impact equipment to safely shutdown the plant, though blast forces cannot at this time be evaluated on these various structures, my experience would suggest blast is not controlling on the facility though you have a better understand of specific plant safety equipment location needed to cool down the facility.*

*The repeated attempts to convey that an analysis of a rupture at this site near the plant on the 42-inch actually reflects the actual rupture case reflects a serious lack, even negligent (a term I don't use lightly in public) attempt, to properly analyze a 42-inch pipeline rupture scenario, on this line at this site, on this system.*

*Any critical independent analysis should clearly define the base case scenario and pipeline operating conditions (flow, pressure) before trying to defend any resulting conclusions."*

Questions:

- 1 How many valves are required to be closed should a rupture occur in either the proposed or the existing gas lines?
- 2 Are all of these valves remotely operated?
- 3 Is a single failure<sup>2</sup> considered?

Response to Questions 9, 10, and 11

The design and construction of the proposed pipeline, which includes requirements for the pipeline isolation valves, will be performed in accordance with the applicable regulations found in Title 49 of the *Code of Federal Regulations* administered by the Pipeline and Hazardous Materials Safety Administration within the Department of Transportation.

As explained in the response to questions 7 and 8, the NRC does not have the regulatory authority to impose its requirements on natural gas pipelines. Therefore, the NRC will not perform a detailed design review of the proposed pipeline and there will be no attempt to impose NRC regulations on the design and construction

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<sup>2</sup> *Single failure.* A single failure means an occurrence which results in the loss of capability of a component to perform its intended safety functions. Multiple failures resulting from a single occurrence are considered to be a single failure. Fluid and electric systems are considered to be designed against an assumed single failure if neither (1) a single failure of any active component (assuming passive components function properly) nor (2) a single failure of a passive component (assuming active components function properly), results in a loss of the capability of the system to perform its safety functions. (10 CFR Part 50, Appendix A)



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of the pipeline.

***According to this statement, the safety of Indian Point is now predicated on 49 CFR 192 and the NRC admittedly states it has no control over the safety of Indian Point and assumes DOT will assure compliance with its regulations.***

***Question #22***

***How does the NRC or Entergy assure that Spectra is in compliance with the requirements of 49 CFR 192? I have reviewed some of these requirements and it is obvious that many requirements are not being met? See for example 49 CFR 192.614, 615 and 616.***

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12. Why has the NRC not informed FERC that the fundamental assumptions and calculations were inaccurate?

Response

The NRC staff concludes that the fundamental assumptions and calculations relied upon for its confirmatory analysis remain accurate.

Independent analyses performed by both Entergy and the NRC staff concluded that a rupture of the proposed pipeline will not adversely impact the safe shutdown of the Indian Point facility. The staff's confirmatory analysis was conservative and bounds expected conditions that would result from a pipeline rupture.

***As discussed in the above, both gas experts and nuclear experts disagree with this conclusion and I believe we, as members of the public, have the right to have an open dialog with the licensee and the NRC to discuss our professional differences of opinions. Our safety should not be dictated by an agency with no expertise in this critical area of nuclear and gas line safety.***

***Mr. Richard Kuprewicz, in a letter to Assemblywoman Galef dated October 12, 2015 stated:***

***"In conclusion, the NRC does not have the expertise nor have they called on appropriate expertise to provide a thorough and complete***

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*evaluation of the impact of this “first of its kind” proposed installation of a large diameter high-pressure natural gas transmission pipeline near a nuclear facility in a highly sensitive area. Such a prudent review requires special precautions to assure analyses are scientific, complete, and thorough (including possible interactions). It appears the claims of “need for security” have undercut verification that such a prudent analysis has been adequately performed. The NRC’s review is not conservative and I would advise that you continue your pursuit of this matter until a complete and proper transient graph and subsequent analysis, as well as other important information is provided that would permit verification that the 42-inch pipeline rupture will not prevent the safe shutdown of the Indian Point nuclear facility. It is my understanding that the close proximity of the plant switchgear station handling power leaving the nuclear plant would most likely be quickly lost in a nearby pipeline rupture, necessitating a nuclear facility emergency shutdown. It is thus important that parties demonstrate that such an event, even if low probability, will not prevent the nuclear facility from an emergency trip cool down. While I can appreciate the need for some security concerns, such concerns should not justify the use of poor tools or assumptions that provide little confidence that this issue has been adequately or prudently analyzed.”*

**Question #23**

***Why has the NRC failed to provide a signed or dated analysis?***

13. Has the NRC staff reviewed the piping and instrumentation (P&IDs) diagrams for the new gas line showing valves, pressure, flow and leak detection instruments? If so, please describe. Does the design meet all NRC requirements to assure all regulations, codes and standards are being properly applied and met?

14. Has the NRC evaluated Spectra's procedures and operator response times and ability to detect a significant loss of integrity of a major gas line?

Response to questions 13 and 14

No. The staff does not plan to perform a detailed review of piping and instrumentation diagrams for the pipeline. As explained in the response to questions 7 and 8, the NRC does not have the regulatory authority to impose requirements on natural gas pipelines. The NRC will not perform a review of the proposed pipeline procedures or Spectra operator training.

***The NRC is misrepresenting my question. I am not requesting***

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***that the NRC impose its requirements but rather to review information deemed absolutely necessary to perform a realistic risk analysis. It is not possible and totally inconsistent with accepted engineering and NRC practices to conduct a risk analysis without this vital information. See Appendix C to § [1910.119](#)—Compliance Guidelines and Recommendations for Process Safety Management”***

**Question #24**

***How can the NRC perform any type of analysis without the information that describes the number of valves required for isolation and the instrumentation, controls and capability to detect ruptures and/or leaks?***

**Question #25**

***What agency or commission provided the NRC with the information about gas pipeline dynamics necessary to do its confirmatory analysis?***

15. Has the NRC evaluated Spectra's safety record with regard to pipeline leaks and incidents? A Spectra pipeline ruptured in the Arkansas River on May 31, 2015 and the company did not know about it for over 24 hours.
16. Why, as stated by the NRC in the Petition Review Board call on July 15, 2015, did the NRC not look at the 30" San Bruno pipeline rupture incident in 2010, or other major gas line ruptures documented by the NTSB [National Transportation Safety Board], when doing the confirmatory analysis of the 42" diameter AIM pipeline?
17. What historical data did the NRC use in its confirmatory analysis to evaluate the risk of rupture of the 42-inch diameter high-pressure pipeline?

Response to questions 15, 16, and 17

As previously discussed, the NRC's regulatory authority regarding the proposed pipeline is limited to ensuring the safe operation of the Indian Point facility. In that regard, the NRC reviewed the analysis conducted by the Indian Point licensee, which concluded that operation of the new pipeline would have minimal impact on plant safety and would not require a license amendment. In addition, the NRC staff performed an independent confirmatory analysis which was conservative and bounding. The staff's analysis was deterministic and did not rely on quantitative risk or probabilities of failure. Therefore, historical information regarding previous

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natural gas pipeline ruptures and Spectra Energy's safety record was not material and not considered as part of the NRC staff's review and confirmatory analysis.

***This statement appears to be inaccurate in that the NRC/Entergy in its confirmatory and independent analysis uses probabilities extensively. The NRC has assigned probabilities to pipe failure, the percent of leaks that result in fires/explosions and the orders of magnitude of safety provided by the concrete slabs placed above certain portion of the buried pipes. These cited probabilities have no engineering basis.***

**Question #26**

***Is the NRC willing to provide references for the probabilities assumed in its calculations? If so, please provide.***

*Blast radius*

*Regulatory Guide 1.91 contains an equation #1 for determining the blast radius or Potential Impact Radius. According to Entergy's and the NRC's analyses, both Entergy and the NRC calculate the blast radius from a rupture of a 42 inch diameter pipeline operating at 850 psi in the range of approximately 1100 feet.*

*If the amount of gas released continues for one hour instead of 3 minutes about 20 times more gas will be released. According to the NRC's own equation #1, this alone will increase the blast radius from about 1100 feet to about 3000 feet without any consideration of vapor clouds or heat flux.*

*Furthermore, the June 29, 2015 letter from the NRC to me addresses reference #6 "Risk Analysis of Natural Gas Pipeline: Case Study of a Generic Pipeline," Chiara Vianello", Giuseppe Maschio Universita di Padova, DIPIC -Dip. di Principi e Impianti Chimici di Ingegneria Chimica Via Marzolo 9-35131 Padova, Italy" that projects a PIR approaching 8000 feet.*

*According to the Entergy report of August 21, 2014, the two SSCs Important to Safety (ITS) structures closest to the new AIM pipeline are the switchyard (115 ft.) and the GT213 fuel tank (105 ft.). The report states, "a loss of the SSCs important to safety would not result in a significant decrease in the margin of safety provided for public health and safety except for the assumed loss of the switch yard and GT 213 FOST, which are more significant SSCs ITS." However, the evaluation then continues, "a postulated gas pipeline rupture near the switchyard could cause total loss of the switchyard of the type that could occur with low probability events such as extreme natural phenomena (e.g. earthquake, tornado winds/missiles, hurricanes, etc.) that the switchyard is not protected against. The potential loss of the switch yard can result in loss of*

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*offsite power to the plant and result in a generator or turbine trip with or without fast bus transfer to the turbine generator bus. This is considered a relatively high probability event ... " The report goes on to analyze the loss of back-up power and Entergy concludes that design enhancements reduce risk, however this risk reduction is not analytically supported.*

*The conclusion in the report is not supported by the NRC regulations and is refuted in its internal documents, references and citations. There most certainly is a risk of complete loss of power, failure of back-up generation, loss of the access road and the city water tank and the risk of a full system failure must be evaluated in a thorough, transparent, independent risk assessment. Entergy may have analyzed the loss of the switchyard and the FOST independently, but not due to a single initiating event.*

Questions

18. Why would the NRC revert to such an obscure reference #6 that is not even cited in RG1.91?

19. Why does PIR radius range from 800 to 8000 feet depending on reference used? Why did the NRC use the smaller radius when assessing risk?

Response to questions 18 and 19

The NRC's letter dated June 29, 2015 (ADAMS Accession No. ML 15097A190), states that the acceptance criteria for evaluating potential hazards are found in Standard Review Plan 2.2.3, "Evaluation of Potential Accidents." The acceptance criteria requires licensees to either: (1) use a deterministic approach to evaluate the impacts of a hazard, or (2) demonstrate that the quantitative risk is acceptably low on the basis of low probability of explosions. A demonstration that the rate of exposure to a peak positive incident overpressure in excess of 1.0 psi (6.9 kPa) is less than  $1 \times 10^{-5}$  per year when based on conservative assumptions, or  $1 \times 10^{-7}$  per year when based on realistic assumptions, is acceptable.

The NRC staff performed an independent confirmatory analysis using a conservative deterministic analysis that assumed a double-ended rupture of the proposed gas pipeline. The staff's analysis did not consider probabilities. Therefore, a probabilistic analysis was not required and any technical argument regarding the use of probabilities is moot for this approach. The staff's discussion of probabilities included in the letter of June 29, 2015, along with the inclusion of Reference 6, demonstrated the rationale and conservatism of NRC's assumptions in addressing the event frequencies for the consequences of a catastrophic pipeline rupture. The cited Reference 6 discussed vapor cloud explosion and heat flux scenarios pertaining to generic pipelines and, therefore, there is no direct relevance between the reference and the methodology of RG 1.91. Consequently, a comparison of PIR radii range is neither applicable nor appropriate.

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Finally, the NRC staff disagrees with the above extrapolation of the blast radius from 1100 to 3000 feet. As discussed in the response to question 4, it is a misapplication of Equation (1) of RG 1.91 to extrapolate a 3 minute gas pipeline release to a 1 hour gas pipeline release by multiplying the available mass by a factor of 20 and taking the cube root. Multiplying the calculated safe distances by a factor of 2.71 (i.e., the cube root of 20), ignores buoyancy of natural gas and artificially assumes that the entire amount of gas released over an hour will remain confined and available for an explosion. Thus, the above argument extending the calculated safe distance of 1100 feet to 3000 feet is flawed.

***This response has no relevance to the question being asked. I have strong disagreements with the above and request the NRC arrange a local meeting to discuss.***

***Question #27***

***Will the NRC agree to a meeting of experts to discuss our different facts and opinions?***

Questions

20. Why do the NRC and Entergy use very different formulas to calculate blast radius, both claiming compliance with RG 1.91?

21. Why did the NRC modify the equation for calculating the blast radius in RG 1.91?

22. RG 1.91 specifically states "Methods and solutions that differ from those set forth in regulatory guides will be deemed acceptable if they provide a basis for the findings required for the issuance or continuance of a permit or license by the Commission." These calculations and methods differ from the Regulatory Guide. Did the NRC use RG 1.91, as the sole reference for evaluating explosions postulated to occur at nearby facilities and on transportation routes near nuclear power plants?

23. Why did Entergy and the NRC fail to provide a basis for deviation from the Regulatory Guide?

Response to Questions 20, 21, 22, and 23

RG 1.91 is the staff's guidance document for evaluating the impact of explosions from nearby facilities and transportation routes. Entergy and the NRC used the methodology and equations of RG 1.91, without deviation, to determine the blast radius of 1.0 psi. No other methodology was used. As discussed in the response to question 2, neither Entergy nor the NRC modified the equations of RG 1.91.

***I totally disagree with this response. This is an intentional***

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***distortion of the true facts. The NRC assumed a buoyancy factor that is not mentioned in RG 1.91 and used a yield factor that is non-conservative. Applying a realistic yield factor for TNT results in a blast radius exceeding 4000 feet which would encompass most vital structures and result in major core damage and damage to the environment.***

***Your statement above is inaccurate, given that the NRC determined the blast radius using ALOHA with a non-conservative wind direction.***

***Using the NRC numbers of 376,000 kg/minute of gas release, my calculations estimate a blast radius exceeding 4000 feet.***

**Question #28**

***Is the NRC willing to exchange its calculation with me to identify this inconsistency?***

24. Why would the NRC use the EPA computer program (ALOHA), which is prohibited for use for a gas pipeline rupture, not referenced in RG 1.91, to calculate the blast radius of a rupture that could have a devastating impact to the more than 20 million persons residing in the vicinity of Indian Point?

Response

The NRC staff used the Areal Locations of Hazardous Atmospheres (ALOHA) computer code to determine the mass of natural gas resulting from a double-ended pipeline rupture that would be available for an explosion. The ALOHA computer program does not prohibit its use for modeling gas pipeline ruptures. It is important to understand what is meant by the ALOHA User's Manual statement: "*ALOHA cannot model gas release from a pipe that has broken in the middle and is leaking from both broken ends,*" and how the staff modeled its confirmatory analysis to address this limitation.

In order to determine the minimum safe distance to 1 psi overpressure using the methodology of RG 1.91, it is necessary to determine: (1) the initial gas release rate from the pipeline break and (2) the total amount of gas available for an explosion at the source of the release. The calculated release may be determined by equations available in standard literature reference material or by using appropriate computer models. In this case, the NRC staff used the ALOHA computer code as a tool to calculate the maximum release rate, which is converted by hand calculation to TNT equivalent. The TNT equivalent value is then used to calculate the minimum safe distance to 1 psi overpressure using the methodology of RG 1.91. The ALOHA code

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was not directly used to calculate the minimum safe distance.

The ALOHA User's Manual includes conditions and limitations for its use. Specifically, when modeling a pipe rupture, ALOHA assumes unidirectional flow from only one end of the broken pipe. Thus, when modeling a guillotine pipe rupture, all flow is assumed to be released from one end of the broken pipe without any backflow from the opposite, or downstream end of the pipe. Clearly, some amount of backflow would be expected from the downstream end of the broken pipe and some type of correction is necessary to use ALOHA to model this scenario.

When evaluating a break in the middle of a pipeline, the NRC staff doubled the predicted gas release from the upstream side of a pipe break to account for flow escaping from both sides of the break. This approach is conservative because in the event of an actual break, the downstream side of the pipe would release much less gas than the estimated release from the upstream side.

The staff also compared release rates calculated by ALOHA with average release rates calculated manually, based on equations available in reference literature and reports. The ALOHA model calculated maximum and average release rates that are higher than the release rates calculated by hand and, therefore, are considered conservative for this application. Accordingly, the staff is confident that its use of the ALOHA code is appropriate for this application and results in conservative gas release rates.

***Both Rick Kuprewicz and I still disagree with the use of the ALOHA model. The letter from Mr. Kuprewicz to Assemblywoman Sandy Galef on October 12, 2015, states,***

***“The transient calculations for this gas transmission system pipeline rupture near the nuclear site can be quite involved, however, and are not well nor scientifically captured by models or unwise assumptions never intended for such purpose, such as the ALOHA model cited by the NRC.”***

***The NRC’s internal email by Mr. Beaulieu projected a mass release of 376,000 kg/min from a ruptured gas line according to FOIA documents. This converts to about 1 million pounds per minute of natural gas equivalent to about 10 million pounds of TNT or about 5 Kilotons (KT) per minute. The atomic bombs dropped in 1945 were about 15 KT.***

***Again, using the NRC’s own numbers and RG 1.91, the blast radius exceeds 4000 feet. The NRC’s statement paraphrased as “it would not make a significant difference if the gas release continued for one hour” is inconsistent with RG 1.91 and is a***



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**false statement.**

**Mr. Kuprewicz's Oct. 12 letter also states:**

*“This NRC statement is meaningless and does not permit an independent evaluation that the parties performing such a potential impact analysis understand the extremely high transient rupture gas rates and very high heat fluxes that can be released on this pipeline system at this site. For example, a three minute closure time does not indicate how long the gas has been releasing (at incredibly high rates) out of a pipeline rupture on this specific system at this location before valve and, ironically, after valve closure. The NRC assumption also appears not to consider that gas release even with closed valves will continue at very high rates for a considerable period of time. A transient graph of mass release versus time will indicate a characteristic gas pipeline rupture fingerprint form that will dispel any attempts to quickly remotely identify, much less actually trigger, valve closure even for automatic valves. Such a graph will also reveal the case irrelevancy of a ruptured pipeline connected to an infinite source of gas for one hour in the matter of this safety analysis.”*

**Question #29**

***Why does the NRC continue to withhold these calculations in spite of numerous FOIA requests? I have received the results from the ALOHA program that was used to calculated the blast radius.***

**Question #30**

***Was ALOHA or RG 1.91 used to calculate the blast radius?***

25. Has the NRC performed a validation and verification of the ALOHA program to ascertain its accuracy?

Response

There is no need for the NRC staff to perform a validation and verification of the ALOHA computer program. ALOHA has been measured against similar computer models and the results are considered comparable.

ALOHA is part of the CAMEO® software suite, which is developed jointly by the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA). Versions of ALOHA have existed since the early 1980s.

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ALOHA is a computer program designed to model chemical releases for emergency responders and planners. It can estimate how a toxic cloud might disperse after a chemical release and it includes several fire and explosion scenarios. ALOHA can model how a hazardous gas cloud will travel downwind including both neutrally buoyant and heavy gas dispersion. Additionally, if the chemical is flammable, ALOHA also models pool fires, vapor cloud explosions, jet fires, and flammable gas clouds (where flash fires might occur).

***The answer is that the NRC, while using this code, has never reviewed it.***

***Question #31***

***Why would the NRC use a non-verified and prohibited code when the safety of more than 20 million persons are at risk?***

*Blast Impact*

*The NRC's email from April 27, 2015 states the quantity of gas released in a pipeline rupture is calculated by the same prohibited ALOHA program as 376,000 kg in the first minute and a release of 200, 000 kg in the next two minutes (accounting for the pressure drop) and 100, 000 kg after the valve closure. In the first four minutes, the amount of energy released is equal to that from the atomic bombs dropped on Japan in 1945. Once more the use and results of ALOHA for this calculation is questionable however assuming these numbers are correct:*

Questions

26. Why would the NRC allow tons of TNT equivalent to be transported per minute through a nuclear site putting the entire Hudson Valley, and its residents and infrastructure at stake without a detailed analysis?

27. Why does the NRC continue to ignore potential major amounts of flammable material in the fuel oil storage tanks? Why has the NRC refused to respond directly to questions about the contents of these tanks?

Response to questions 26 and 27

The NRC reviewed the licensee's 50.59 site hazards analysis and performed an independent confirmatory analysis that substantiate Entergy's conclusions that the proposed pipeline poses no increased risks to the Indian Point facility. The NRC staff shared its findings with FERC, which subsequently approved the proposal. Multiple Federal and state agencies had a role in the review and approval of the Spectra pipeline. As previously discussed, the NRC does not have regulatory authority to approve the proposed natural gas pipeline. The role of the NRC is limited to ensuring

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that the Indian Point licensee performed a site hazards analysis in order to determine whether the proposed pipeline presented an unacceptable risk to the safe operations of the facility.

The fuel oil tanks of concern were formerly used to generate super heat for the Indian Point Unit 1 steam generators. Indian Point Unit 1 was permanently shut down in 1974. Since that time, the fuel oil tanks have been drained, decommissioned, and abandoned onsite. Supply piping to the fuel oil tanks has been disconnected. If any residual oil remains in these tanks, it would not represent any concerns. Any remaining residual oil would not be explosive and at worst, would only present a minor fire hazard.

***As stated previously, the NRC has not provided a detailed analysis and what little they did provide was based on false information provided by Entergy. Further, the NRC made assumptions that are inconsistent with regulatory guidance and underestimated the actual blast radius.***

***The NRC/Entergy have never verified the content of these tanks and has no idea how much fuel may be contained within these tanks that are located directly above the vital structures needed to assure the safe shutdown of Indian Point.***

**Question #32**

***Why does the NRC/Entergy continue to refuse to verify the potential content of these tanks and the potential impact on the plants?***

*Vapor Clouds*

*RG 1.91 cites "International Atomic Energy Agency [IAEA], Safety Standards Series, Safety Guide No. NS-G-3.1, "External Human Induced Events in Site Evaluation for Nuclear Power Plants, 2002, Vienna Austria" as a reference. This International Standard addresses vapor cloud explosions and states: "In some States (Countries) an SD V {screening distance value} in the range of 8-10 km is used for the sources of hazardous clouds."*

*Apparently the IAEA considers the danger from vapor clouds to range out to beyond 8 Km, yet the NRC has no problem locating major gas transmission lines within 400 feet of vital structures of two operating 1000 Mwe nuclear plants located in one of the most densely populated areas in the world.*

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Questions

28. Fully recognizing this is not a regulation but only a statement and that most of the world avoids gas lines within 8 to 10 Km from nuclear plants, how can the NRC

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justify locating gas lines within 400 feet of vital structures without any justification or explanation?

29. Why wasn't an explanation from an IAEA document included in the analysis? How did the NRC evaluate the potential for vapor cloud explosions while totally ignoring its own guidance provided in RG 1.91 and its references?

Response to Questions 28 and 29

IAEA Safety Standards Series, Safety Guide No. NS-G-3.1, "External Human Induced Events in Site Evaluation for Nuclear Power Plants," provides recommendations and guidance for evaluating potential site locations for nuclear power plants in order to identify hazardous phenomena associated with human induced events initiated by sources external to the plant. The IAEA document does not provide guidance on analyzing potential gas pipeline ruptures and, therefore, there was no need to reference it in either the Entergy site hazards analysis or NRC's confirmatory analysis.

The statement quoted from the IAEA document, "In some States [countries] an SDV [screening distance value] in the range of 8-10 km is used for the sources of hazardous clouds," was a footnote intended as a tool to initially screen out those facilities and activities to which no further consideration to external hazards should be given. The IAEA document does not recommend that gas pipelines be separated from nuclear power plants by 8-10 km.

Similar to the 50.59 site hazards analysis performed by the licensee for the proposed pipeline, Entergy used the same contractor using the same methodology to perform a similar site hazards analysis for the existing gas pipelines in 2008. As discussed in the responses to questions 6 and 31, this analysis assumed the simultaneous rupture of both gas pipelines at their **above ground locations**. The licensee's analysis concluded that a rupture of both gas pipelines at their above ground location will not result in damage to safety related structures. The NRC staff reviewed this analysis and concluded that failures of these gas pipelines will not impair the safe shutdown of Indian Point.

The NRC staff did not ignore the guidance of RG 1.91. As previously discussed, the staff's confirmatory analysis to evaluate vapor cloud explosions did not modify the equations of RG 1.91 and implemented the methodology without exception.

***This is an admission by the NRC/Entergy that the 63 year old lines located closest to the plant's vital structures have not been analyzed. These lines, due to their age and the failure of the NRC/Entergy to review inspection results makes them particularly susceptible to failure from corrosion and other activities. There is documented evidence in publically available documents that deep borings have taken place within 15 feet of***

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***these buried gas lines and there is documented evidence that operations personnel were not aware of the existence of these lines.***

***The statement by the NRC that it did not modify the assumptions of RG 1.91 for the yield factor and buoyancy of natural gas is another false statement by the NRC. This buoyancy is already accounted for in the Regulatory Guide 1.91 as is the potential for vapor cloud explosions.***

***Question #33***

***Why did Entergy/NRC ignore the possibility of a pipe leak or rupture or leak of these lines near the plant's vital structures when this is the location where the failure of these lines would result in the most damage to the nuclear plants?***

*General Concerns*

30. I have reviewed both the Entergy and NRC calculations and did not see any calculations discussing heat flux. How did the NRC calculate the impact of heat flux, vapor cloud explosions and possible secondary fires such as from the "abandoned" fuel oil storage tanks?

Response

The ALOHA code was used by both Entergy and the NRC staff to calculate heat flux resulting from a postulated rupture of the proposed gas pipeline. The NRC staff performed a bounding analysis that assumed a double-ended rupture of the proposed pipeline with an infinite upstream source of natural gas for a full hour. The threshold value of heat flux, i.e.,

12.6 kw/m<sup>2</sup>, where plastic melts, was not exceeded within the security owner controlled area (SOCA) fence and, therefore, safety-related structures, systems, and components would not be exposed to the threshold value of heat flux.

The NRC staff did not consider secondary fires or other secondary impacts such as fuel oil storage tanks. The GT2/3 fuel oil storage tank near the switchyard is located 105 feet from the proposed pipeline's location. If this tank ruptured, local topography would result in its contents flowing away from the site and, therefore, it would not represent a threat to the Indian Point facility. The abandoned fuel oil storage tanks that supported operation of Indian Point Unit No. 1 were drained and decommissioned following the permanent shutdown of Unit No. 1 in 1974. These

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tanks are located several hundred feet outside of the SOCA fence. Any residual oil that might remain in these tanks would not explode and at most, would only burn. A small fire at this location would not represent a threat to the Indian Point facility.

***ALOHA was apparently used to calculate heat flux in direct conflict with NRC guidance of RG 1.91. RG 1.91 provides a direct reference to calculating heat flux and secondary fires. In spite of this NRC guidance, the NRC ignored it and used a non-approved ALOHA program without any justification. See pasted output from the NRC's use of the ALOHA program.***

***Furthermore, in its calculation, the NRC assumed the wind was from the east thereby blowing away from the plant, and consequently underestimating the effect on the plant.***

***Question #34***

***Why was this non-conservative easterly wind direction assumed that would tend to blow the gas plume away from the plant?***

31. Please explain why the probability of failure and risk for the existing gas line is less than that of the new gas line. Indian Point's Final Safety Analysis (FSAR), approved by the NRC states that a failure of the existing buried gas transmission lines is "not feasible" which, to me means it is significantly less than  $10^{-7}$  failures per year. How can the proposed AIM pipeline realistically have a higher failure probability than the existing 63-year old line that has no documented inspection history?

Response

There has been no assertion by either the licensee or the NRC that the probability of failure and risk for the existing gas pipelines is less than that of the proposed new gas pipeline.

Section 2.2.2, "Site Ownership and Control," of the Indian Point 3 UFSAR is being misinterpreted. Section 2.2.2 of the UFSAR was updated in Revision 3 to reference a 2008 study of the existing natural gas pipelines. Up until that time, only a single gas pipeline was assumed to rupture. However, since acts of intentional and malicious activity could no longer be excluded, the licensee contracted a study that assumed the simultaneous rupture and ignition of **both gas pipelines at the above ground location** inside the owner controlled property. This would clearly represent worst case conditions and would provide the most conservative analysis for explosions and fires.

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The licensee assumed that the most likely cause for both exposed pipelines to rupture would be the result of a terrorist action. The licensee's statement that "*An attempt to uncover, breach and ignite a buried portion of the pipeline was not considered feasible,*" represents the conclusion that a terrorist would target the exposed pipelines as opposed to bringing in heavy equipment to uncover buried piping. The licensee's statement makes no reference to probability. Thus, any attempt to link the licensee's statement of "not feasible" to a determination that the probability of a pipe rupture is less than  $10^{-7}$  failures per year, is out of context and a misinterpretation of the UFSAR.

Finally, with regard to the statement that the existing gas pipeline "has no documented inspection history," see the response to question 33 below.

***In its analysis submitted in August 2014, Entergy attempted to assess the failure of the new 42-inch pipeline and determined that it was feasible. If a failure of the AIM pipeline is "feasible" then certainly the failure of the existing lines must also be feasible. Entergy has an obligation to correct its FSAR as required by 10 CFR 50.71.***

***Because Entergy has determined the AIM project presents a Design Basis Event, it would seem logical that the existing lines, due to their age and closer proximity, would also be a DBE and should be analyzed immediately.***

***Question #35***

***Why hasn't the NRC required these lines be analyzed for a potential terrorist attack both within and outside Entergy controlled property?***

32. Entergy, in its analysis, considers the potential for AIM gas line ruptures to be a Design Basis Event (DBE). The existing old gas lines are much closer to vital SSC's and the failure of these lines is intuitively much higher. Why does Entergy and the NRC not consider these lines to be a potential DBE and associated requirements imposed?

**Response**

The existing gas pipelines were not required to be analyzed as a potential design basis accident (OBA) in the Final Safety Analysis Report as part of the original licensing of Indian Point. Notwithstanding this, the potential rupture and ignition of the existing gas pipelines is considered part of the plant's licensing basis, and has been reviewed. Similarly, the proposed AIM gas pipeline was not required to be analyzed as a potential OBA, and was instead analyzed and evaluated through the 10 CFR 50.59



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process.

***By its own admission the NRC now states the failure of the buried portions of the existing gas lines has not been reviewed or analyzed.***

***The NRC's statement "the potential rupture and ignition of the existing gas pipelines is considered part of the plant's licensing basis, and has been reviewed." appears to be inaccurate and in conflict with numerous NRC statements including the NRC's letter of 11/6/2015***

***Question #36***

***Why has the NRC failed to require Entergy to analyze the piping located closest to the vital structures and the control room given that this is an unanalyzed condition and continued operation is prohibited by Regulations as well as most likely by the plant's Technical Specifications?***

33. Has the NRC reviewed Spectra's operating and inspection procedures to assure the integrity of the existing Algonquin gas transmission system?

Response

No. The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) enforces regulations for the nation's gas pipeline transportation system.

Spectra Energy implements standard operating procedures requiring: (a) periodic inspection of its pipelines using in-line inspection tools able to identify potential corrosion and damage defects, (b) monitoring of corrosion protection systems, and (c) frequent aerial patrols to identify unauthorized activities on the right-of-way. Since the Algonquin Indian Point right-of-way containing the 26-inch and 30-inch natural gas pipelines is located in a defined high consequence area (HCA) as interpreted and classified by Spectra, PHMSA regulations require inspections of pipelines located in HCAs on a more frequent basis, with a maximum interval of seven years for the internal inspections.

Algonquin has advised Entergy that, consistent with those regulations, Algonquin most recently conducted in-line tool inspections of the existing 26-inch and 30-inch lines in 2011 and 2014, respectively. Algonquin further advised Entergy that all inspections and follow-up actions were completed in accordance with applicable regulations and its own engineering standards. Pursuant to regulations in 49 CFR Part

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192, Spectra Energy is required to maintain pipeline records for the useful life of the pipeline.

***The NRC has the authority to require Entergy to review Spectra's inspection and operation procedures yet elects not to require this to be done. The NRC is ignoring its responsibility to protect the public by not assuring all regulations are being met to protect the safety of Indian Point and the public and passing the buck to another agency.***

***Question #37***

***Why is the NRC reluctant to require Entergy to assure the requirements for gas piping located on Entergy property be in compliance with Federal Regulations?***

34. Are Entergy operators at Indian Point trained in how to address an explosion/fire/gas release from existing the lines or even aware of the location of the lines at Indian Point or knowledgeable about the risks associated with these 63-year-old lines?

Response

As a condition of their license, Indian Point is required to have a Fire Protection Program where plant operators are trained as a fire brigade to respond to and fight a comprehensive variety of plant fires.

The NRC regularly inspects the ability of the fire brigade to respond to fires through its Reactor Oversight Process baseline inspection program. We verify through inspections that the site fire brigade maintains the ability to properly respond to, and extinguish, plant fires.

***My interpretation of this response is that Entergy and local responders have not received training on responding to a gas fire or explosion. This appears to be in conflict with DOT regulations, 49 CFR 192.***

***Question #38***

***Why does the NRC/Entergy knowingly permit the installed gas piping to exist given that it is in conflict with Federal Regulations?***

35. Do Entergy and Spectra coordinate safety and emergency response training? How

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often is training conducted? Does the NRC review these training procedures?

Response

There are no NRC requirements for Entergy and Spectra Energy to coordinate safety and emergency response training. However, as part of the Reactor Oversight Process, the NRC reviews Entergy's emergency planning procedures and training.

These reviews include regular drills and exercises that assist licensees in identifying areas for improvement, such as in the interface of security operations and emergency preparedness. Entergy is required to exercise its emergency plan with offsite authorities, including the local Buchanan fire department, at least once every two years to ensure state and local officials remain proficient in implementing their emergency plans. Those biennial exercises are inspected by the NRC and evaluated by FEMA. Licensees also self-test their emergency plans regularly by conducting drills. Each plant's performance in exercises can be accessed through the NRC website at the Reactor Oversight Process page.

***Again, there is no training or awareness of responding to a gas line incident by Entergy personnel or offsite personnel. This appears to be in violation with the requirements of 49 CFR 192.615. See Question #29 above.***

***Question #39***

***Will Entergy/NRC provide any assurance to the public that all federal regulations have been met?***

36. What actions will the NRC take to respond to the existing pipelines' unanalyzed condition?

Response

Both the licensee and the AEC/NRC have analyzed the existing gas pipelines and concluded that they do not present an unacceptable risk to the Indian Point site. See the response to question 6.

***The NRC/Entergy admit it has never analyzed failure of the existing buried pipelines therefore, the plants are operating in an unanalyzed condition and nobody seems to care.***

***Question #40***

***Has the NRC or Entergy ever analyzed the potential rupture of the existing gas lines located within 400 feet of the control***

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***room? If so, please provide a copy.***

***Question #40***

***Has the NRC been provided assurance that a gas leak in the vicinity of the control room will be immediately detected and isolated prior to explosive methane concentrations being reached? If so, please provide a copy.***

***Question #41***

***Has the NRC or Entergy ever analyzed the potential rupture of the existing gas lines located within 400 feet of the switchgear room?***

***Question #42***

***What is the impact of a loss of the entire control room and its personnel?***

37. Has the NRC reviewed Entergy's existing and proposed emergency procedures for the local Buchanan volunteer fire brigade to deal with a major rupture and resulting fires at the Indian Point facility? Has the NRC discussed the ability and/or inability to provide adequate fire services with the local Buchanan volunteer fire brigade? If not, why? If so, how adequate does the NRC deem the Buchanan volunteer fire brigade is in addressing a pipeline rupture at Indian Point?

**Response**

Plant procedures are in place which require a call for offsite fire department assistance for numerous situations, including the case if the onsite fire brigade is unable to effectively control or extinguish the fire. In the case of a natural gas pipeline failure near Indian Point, it is expected that a call for offsite support would be made. Plant operators or fire brigade members would not be responsible to isolate the source of the natural gas, or rely on automatic isolation valves. Rather, the gas pipeline transmission operator would isolate the source from a remote control station. Damage to plant structures would not impair the safe operation of the facility or its ability to safely shutdown.

***Question #43***

***Has the NRC reviewed Entergy's existing and proposed emergency procedures for the local Buchanan volunteer fire***

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***brigade to deal with a major rupture and resulting fires at the  
Indian Point facility?***

As discussed in the response to question 35, the local Buchanan fire department participates in biennial exercises of the Entergy emergency plan. Those exercises, which are inspected by the NRC and evaluated by FEMA, demonstrate the continued proficiency of the Buchanan fire department to provide their necessary support.

38. Did the NRC receive and review the Piping, Instrumentation and Flow Diagrams of the proposed and the existing gas transmission lines?

Response

No. The design and construction of the existing and proposed gas pipelines are outside the authority of the NRC. Therefore, there is no regulatory basis for the NRC to review detailed design information of either the existing or proposed gas pipelines. Design requirements of the nation's natural gas pipelines are included in Title 49 of the *Code of Federal Regulations* that are administered by the Pipeline and Hazardous Materials Safety Administration of the Department of Transportation.

***It is not possible to perform a realistic analysis without this information. The NRC/Entergy have no idea as to what and how many valves would be required to be closed and how a leak or rupture would be detected.***

***Question #44***

***How is it possible to conduct a realistic risk assessment without a complete understanding of the system drawings and controls for leak detection and isolation?***

39. Does the NRC have any Quality Assurance requirements/procedures for conducting safety related calculations? If so, what are they?

Response

No. As discussed in the response to question 1, the NRC staff does not perform "safety-related" calculations. Calculations may be performed by the staff as needed to support independent confirmatory analysis. In this case, the staff performed an independent analysis that received a peer review by a qualified NRC engineer.

***I received a FOIA response that confirms this "independent analysis" was conducted by an individual who states "I'm not a***

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***risk engineer” and reviews an analysis for an LNG pipe rather than a natural gas line.***

***Question #45***

***How can the NRC allow someone who admits he is not a risk engineer to perform an independent confirmatory analysis that requires someone who is qualified?***

***Question #46***

***Why is this vital document, the confirmatory analysis peer-review, not signed or dated?***

The NRC appreciates your concerns and will continue to evaluate all new information regarding the existing and proposed natural gas pipelines through the Reactor Oversight Program.

Sincerely,

***/RAJ***

Christopher G. Miller, Director Division of  
License Renewal Office of Nuclear Reactor  
Regulation

Docket Nos.: 50-247 and 50-286

Enclosure As  
stated

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Comments and Questions on  
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***Paul M. Blanch***  
***Energy Consultant***

12/17/15

Chairman Norman Bay  
Federal Energy Regulatory Commission  
888 First Street N.E.  
Washington, D.C. 20426

[Benjamin.williams@FERC.gov](mailto:Benjamin.williams@FERC.gov)

Re: Docket #CP14-96

Spectra Incremental Market (AIM) Project siting at the Indian Point Energy Center (IPEC)

Dear Chairman Bay,

The Spectra Algonquin Incremental (AIM) project is currently under construction and a tolling order has been in place since May 3, 2015. Many significant issues were raised in nine Requests for Rehearing, yet these issues remain unaddressed.

The final EIS issued by FERC on January 23, 2015 for the AIM Project states:

*5.1.12 Reliability and Safety*

*The pipeline and aboveground facilities associated with the AIM Project would be designed, constructed, operated, and maintained **in accordance with or to exceed the PHMSA Minimum Federal Safety Standards in 49 CFR 192 [emphasis added]**. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. The PHMSA specifies material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion.*

I have written a letter to the Department of Transportation, PHMSA, (copy enclosed) outlining many ways in which PHMSA has not assured compliance with 49 CFR 192. Specifically, 49 CFR 192.935 requires a risk assessment and 49 CFR 192.917 requires the operator to identify potential threats to pipeline integrity and use the threat identification in its integrity program.

49 CFR 192.935 clearly requires a risk assessment by stating:

*§192.935 What additional preventive and mitigative measures must an operator take?*

*General requirements. An operator must take additional measures beyond those already required by Part 192 to prevent a pipeline failure and to mitigate the consequences of a*



December 17, 2015

*pipeline failure in a high consequence area. An operator must base the additional measures on the threats the operator has identified to each pipeline segment. (See §192.917) An operator must conduct, in accordance with one of the **risk assessment** [emphasis added] approaches in ASME/ANSI B31.8S (incorporated by reference, see §192.7), section 5, a ***risk analysis of its pipeline to identify additional measures to protect the high consequence area and enhance public safety*** [emphasis added]. Such additional measures include, but are not limited to, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs.*

I urge you to rehear the decision to grant Spectra Energy Partners a Certificate of Public Convenience and Necessity and to institute a stay of construction due to the national security and safety issues related to the siting of the Spectra AIM pipeline at the Indian Point nuclear facility. The Federal Energy Regulatory Commission based its approval on the faulty Entergy risk assessment and the NRC's confirmatory analysis that does not properly evaluate the risk of a gas pipeline rupture and the potential for a catastrophic result in the densely populated New York City metropolitan region. FERC also failed to provide assurance that all of the requirements of 49 CFR 192 were being met.

Enclosed please find my comments regarding the Nuclear Regulatory Commission's responses to 39 questions I submitted on July 27, 2015. The NRC's letter of November 6, 2015 was sent long after the 4-6 weeks that the NRC estimated when Senator Gillibrand's aide inquired about the length of time it would take for the questions to be answered. A letter from Congressman Eliot Engel and Congresswoman Nita Lowey dated October 21, 2015 urged the NRC to send the responses within two weeks and the long-awaited responses finally arrived on November 6, 2015.

I have taken time to address each of the NRC's responses and I urge you to require PHMSA to provide a copy of its or Spectra's risk assessment and how all of the requirements of 49 CFR 192 are being met as stated in FERC's EIS

I have confirmation from the NRC that FERC's EIS, the AIM project is not in compliance with 49 CFR 192.615 and other requirements as outline in my enclosed letter to the PHMSA Administrator.

How can we be reassured that the AIM project is in compliance with 49 CFR 192, especially with the requirement for a risk assessment?

Please feel free to contact with me with any questions.

Sincerely,

December 17, 2015

A handwritten signature in cursive script that reads "Paul M. Blanch".

Paul M. Blanch  
135 Hyde Rd.  
West Hartford, CT 06117  
860-236-0326

Document Content(s)

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154 FERC ¶ 61,048  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;  
Cheryl A. LaFleur, Tony Clark,  
and Colette D. Honorable.

Algonquin Gas Transmission, LLC

Docket No. CP14-96-001

ORDER DENYING REHEARING AND DISMISSING STAY REQUEST

(Issued January 28, 2016)

1. On March 3, 2015, the Commission issued an order granting Algonquin Gas Transmission, LLC (Algonquin)<sup>1</sup> a certificate of public convenience and necessity (March 3 Order) under section 7(c) of the Natural Gas Act (NGA)<sup>2</sup> authorizing Algonquin to construct and operate pipeline and appurtenant facilities in New York, Connecticut, Rhode Island, and Massachusetts (Algonquin Incremental Market Project or AIM Project).<sup>3</sup> The Commission also granted Algonquin authorization under section 7(b)<sup>4</sup> of the NGA to abandon a meter station and certain aboveground facilities.

2. The Commission received eight timely requests for rehearing from Allegheny Defense Project (Allegheny); City of Boston Delegation (Boston Delegation); Coalition of Environmental and Community Organizations, Impacted Landowners, and Municipalities (Coalition); Town of Cortlandt, New York; Town of Dedham, Massachusetts; Peter Harckham; Riverkeeper, Inc. (Riverkeeper); and West Roxbury

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<sup>1</sup> Algonquin is a subsidiary of Spectra Energy Partners, LP (Spectra).

<sup>2</sup> 15 U.S.C. § 717f(c) (2012).

<sup>3</sup> *Algonquin Gas Transmission, LLC*, 150 FERC ¶ 61,163 (2015) (March 3 Order).

<sup>4</sup> 15 U.S.C. § 717f(b) (2012).

Intervenors.<sup>5</sup> Coalition and the Town of Cortlandt also request a stay of Algonquin's certificate. Algonquin filed an answer to the rehearing and stay requests.<sup>6</sup>

3. As discussed below, we deny the rehearing requests and dismiss the stay request.

**I. Background**

4. The March 3 Order authorized Algonquin to construct and operate the AIM Project to expand the pipeline capacity on its existing pipeline system, which extends from points near Lambertville and Hanover, New Jersey, through the States of New Jersey, New York, Connecticut, Rhode Island, and Massachusetts, to points near the Boston area.

5. The AIM Project involves the construction, installation, operation, and maintenance of 37.4 miles of pipeline and related facilities in New York, Connecticut, and Massachusetts. A majority of the pipeline installation will replace existing pipeline with larger diameter pipeline. The remaining pipeline installation will be new pipeline, including the new West Roxbury Lateral, an approximately 5-mile lateral that will be constructed off Algonquin's existing I-4 System Lateral in Norfolk and Suffolk Counties, Massachusetts, and will connect to the new West Roxbury Meter Station in Suffolk County, Massachusetts.

6. The AIM Project will also add 81,620 horsepower (hp) of compression at six existing compressor stations in New York, Connecticut, and Rhode Island; involve the abandonment of certain facilities; include the construction of three new meter stations, including the West Roxbury Meter Station; and modify 24 existing meter stations. Through these expansion upgrades, the AIM Project will provide 342,000 dekatherms (Dth) per day of firm transportation service from an existing receipt point in Ramapo, New York, to eight local distribution companies and two municipal utilities (collectively,

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<sup>5</sup> The parties joining the rehearing requests filed by Boston Delegation, Coalition, and West Roxbury Intervenors are listed in Appendix A.

<sup>6</sup> Rule 213(a)(2) of the Commission's Rules of Practice and Procedure prohibits answers to rehearing requests. 18 C.F.R. § 385.215(a)(2) (2015). However, because Algonquin's answers have assisted in our decision-making process, we will waive Rule 213(a)(2) to admit its answers.

the Project Shippers)<sup>7</sup> at their various city gate delivery points in Connecticut, Rhode Island, and Massachusetts.

7. On August 6, 2014, Commission staff issued a draft environmental impact statement (EIS), which established a 45-day comment period ending on September 29, 2014.<sup>8</sup> Commission staff held five public meetings to receive comments on the draft EIS, and continued to accept comments past the comment deadline. On January 23, 2015, Commission staff issued a final EIS.<sup>9</sup> The final EIS concluded that the impacts from the construction and operation of the AIM Project, some of which would be adverse, would be reduced to less-than-significant levels with the implementation of Algonquin's proposed mitigation and Commission staff's 32 recommended mitigation measures.

8. The March 3 Order concurred with the final EIS's findings and adopted the EIS's recommended mitigation measures as conditions of the order. The March 3 Order determined that the AIM Project, if constructed and operated as described in the final EIS, was an environmentally acceptable action and was required by the public convenience and necessity.

## **II. Procedural Issues**

### **A. Late Interventions and Non-Parties Requesting Rehearing**

9. On March 3, 2015, Paul Nevins filed a late motion to intervene followed by Karen L. Weber's on March 16; David Ludlow's and the Foundation for a Green Future, Inc.'s (Foundation) on March 17; and Paul D. Horn's on March 23. These late interventions have been filed nearly one year after the initial intervention deadline of April 8, 2014, more than five months after the draft EIS intervention deadline of September 29, 2014,<sup>10</sup> and on the date of, or after, the issuance of the Commission's

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<sup>7</sup> The Project Shippers are Bay State Gas Company; Boston Gas Company; Colonial Gas Company; Connecticut Natural Gas Corporation; Middleborough Gas and Electric; The Narragansett Electric Company; Norwich Public Utilities; NSTAR Gas Company; The Southern Connecticut Gas Company; and Yankee Gas Services Company.

<sup>8</sup> 79 Fed. Reg. 47,100 (2014).

<sup>9</sup> 80 Fed. Reg. 5,104 (2015).

<sup>10</sup> Pursuant to sections 157.10(a)(2) and 380.10(a)(1)(i) of the Commission's regulations, motions to intervene based on environmental grounds are deemed timely if they are filed within the comment period on a draft EIS. 18 C.F.R. §§ 157.10(a)(2), 380.10(a)(1)(i) (2015).

March 3 Order on the merits. On March 23, 2015, Algonquin filed a timely answer to Ms. Weber's, Mr. Ludlow's, and the Foundation's pleadings, stating that the Commission should deny their late motions to intervene.

10. In ruling on a late motion to intervene, the Commission applies the criteria set forth in Rule 214(d),<sup>11</sup> and considers, among other things, whether the movant had good cause for failing to file the motion within the time prescribed, whether any disruption to the proceeding might result from permitting the intervention, and whether any prejudice to or additional burdens upon the existing parties might result from permitting the intervention. When late intervention is sought after the issuance of a dispositive order, the prejudice to other parties and burden on the Commission of granting late intervention may be substantial. Thus, movants seeking intervention after a dispositive order's issuance bear a higher burden to demonstrate good cause for the granting of late intervention.<sup>12</sup>

11. None of these movants requesting late intervention adequately address the factors required to grant a late intervention under Rule 214(d) nor explain why they waited to request to intervene in this proceeding. Accordingly, we find that these late movants have not shown good cause to be granted intervention at this late stage. Allowing late intervention at this point would create prejudice and additional burdens to the Commission, other parties, and the applicant. Therefore, we deny these late motions.

12. The late movants also joined either Coalition's or West Roxbury Intervenors' request for rehearing. Under section 19(a) of the NGA<sup>13</sup> and Rule 713(b) of the Commission's Rules of Practice and Procedure, only parties to a proceeding are entitled to request rehearing of a Commission decision.<sup>14</sup> Because the late movants are not parties to this proceeding, they have no standing to seek rehearing of the March 3 Order, and cannot join the rehearing applicants. Joseph Matthew Hickey also joined Coalition's request for rehearing but never filed a motion to intervene.<sup>15</sup> Therefore, he is not a party to this proceeding and has no standing to seek rehearing along with Coalition's members. Nevertheless, by answering Coalition's and West Roxbury Intervenors' concerns below,

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<sup>11</sup> 18 C.F.R. § 385.214(d) (2015).

<sup>12</sup> See, e.g., *Islander East Pipeline Co.*, 102 FERC ¶ 61,054, at PP 17-19; *Midwest Independent Transmission System Operator, Inc.*, 102 FERC ¶ 61,250, at P 7 (2003).

<sup>13</sup> 15 U.S.C. § 717r(a) (2012).

<sup>14</sup> 18 C.F.R. § 385.713(b) (2015).

<sup>15</sup> See Coalition April 2, 2015 Rehearing Request at Exhibit 1 "List of Intervenors" at 5.

we also address the late movants' and Mr. Hickey's concerns.

**B. Late Rehearing Request**

13. On Thursday, April 2, 2015, at 11:22:56 p.m., William Huston electronically filed a request for rehearing. Because Mr. Huston's rehearing request was filed after 5:00 p.m. Eastern time, the end of the Commission's regular business hours,<sup>16</sup> we consider the rehearing request filed on the next business day, April 3, 2015.<sup>17</sup> Pursuant to section 19(a) of the NGA,<sup>18</sup> an aggrieved party must file a request for rehearing within 30 days after the issuance of a final Commission decision, in this case no later than April 2, 2015. The Commission cannot waive the 30-day statutory deadline for filing requests for rehearing. Consequently, because Mr. Huston filed his rehearing request on April 3, 2015, we will deny his rehearing request.

14. Nevertheless, below we address the issues raised by Mr. Huston in our response to the same issues raised by the rehearing applicants regarding whether the Commission's issuance of conditional approval violated section 401 of the Clean Water Act, whether Commission staff improperly segmented its environmental review of the AIM Project, whether the AIM Project is overbuilt, and whether the Commission sufficiently assessed project need, safety, indirect and cumulative impacts, and health impacts.<sup>19</sup>

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<sup>16</sup> 18 C.F.R. § 375.101(c) (2015).

<sup>17</sup> See 18 C.F.R. § 385.2001(a)(2) (2015) ("Any document received after regular business hours is considered filed on the next regular business day.").

<sup>18</sup> 15 U.S.C. § 717r (2012).

<sup>19</sup> Mr. Huston's rehearing request also alleges that the Commission delegated its authority to the American Petroleum Institute, allowed pipelines to begin construction before issuing a certificate, and violated Title V of the Clean Air Act by issuing the certificate order before states issued their air quality permits. Mr. Huston's claims are unfounded. The Commission independently evaluates pipeline applications based on the available public record. Pipelines cannot begin construction before receiving authorization from the Director of the Commission's Office of Energy Projects pursuant to a certificate order's conditions. Pipeline companies that violate certificate conditions are subject to general and civil penalties. See 15 U.S.C. §§ 717t; 717t-1 (2012). Further, the Commission may issue certificates conditioned on a pipeline obtaining Clean Air Act permits. *Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1321 (D.C. Cir. 2015) (*Myersville*).



### C. Late Comments

15. Several individuals filed comments after the March 3 Order's issuance without requesting rehearing.<sup>20</sup> These comments raised safety and environmental concerns that were previously addressed in the final EIS and the March 3 Order, and are addressed in this order below. Many of these individuals requested that we vacate the tolling order so parties may file an appeal in court.<sup>21</sup> Because we are issuing the rehearing order, and parties to this proceeding may seek judicial review, this issue is moot.

16. Occupy Providence, an entity that filed comments at a public meeting discussing the draft EIS but did not intervene, also filed nine reports after the March 3 Order's issuance for Commission staff to use in its environmental review. The Commission's longstanding policy is not to accept additional evidence at the rehearing stage of a proceeding, absent a compelling showing of good cause.<sup>22</sup> Because other parties are precluded under Rule 713(d)(1) of our Rules on Practice and Procedure<sup>23</sup> from filing answers to requests for rehearing, allowing the late commenters to introduce new evidence at this stage would raise concerns of fairness and due process for other parties to the proceeding. In addition, accepting such evidence at the rehearing stage disrupts the administrative process by inhibiting the Commission's ability to resolve issues with finality. Occupy Providence neither explains nor justifies why the additional information should be admitted after the close of the record and after the issuance of a dispositive order in this proceeding. Therefore, we will not accept the additional reports as evidence.

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<sup>20</sup> Bernard Vaughey labeled his two August 14, 2015, filings as requests. We treat these filings as comments.

<sup>21</sup> We note that section 19(b) of the NGA prohibits any entity from requesting judicial review of any order of the Commission if that entity did not request the Commission to rehear that order. 15 U.S.C. § 717r(b) (2012) ("No objection to the order of the Commission shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing unless there is reasonable ground for failure [to do so].").

<sup>22</sup> See *Tennessee Gas Pipeline Co., L.L.C.*, 142 FERC ¶ 61,025, at P 28 (2013); *Nevada Power Co.*, 111 FERC ¶ 61,111, at P 10 (2005).

<sup>23</sup> 18 C.F.R. § 385.713(d)(1) (2015).

**D. Motion to Assign Intervenor Status**

17. On June 2, 2015, Mr. Harckham filed a motion requesting to assign his intervenor status to Mary Jane Shimsky, his successor as the chair to the Westchester County, New York, Board of Legislators' Labor, Parks, Planning, and Housing Committee (Committee).

18. Mr. Harckham filed a timely motion to intervene on April 8, 2014. Mr. Harckham's motion, however, does not clearly state that he acted on behalf of the Committee nor has Mr. Harckham provided us with evidence that he was authorized by the Westchester County Board of Legislators to intervene on behalf of the Committee. Therefore, we find that Mr. Harckham intervened as an individual. Because individuals represent themselves, an individual's interest or intervention cannot be assumed by another individual. We thus deny Mr. Harckham's motion to assign his status to Ms. Shimsky.

**III. Rehearing Request**

19. In the rehearing requests, the parties raise arguments concerning whether we erred in declining to hold an evidentiary hearing, whether our conditioned approval violated section 401 of the Clean Water Act, whether the project is required by the public convenience and necessity, as well as numerous issues related to the adequacy of the Commission staff's NEPA analysis. We address these arguments in turn below.

**A. Evidentiary Hearing**

20. Coalition argues that the Commission erred when it declined to hold a trial-type hearing to resolve disputed issues of material fact as requested by Mr. Huston. Mr. Huston requested a formal hearing to address issues regarding segmentation of planned Northeast natural gas pipeline projects, unconventional natural gas development impacts, project need, the project's potential to export natural gas, and general pipeline safety.<sup>24</sup> Coalition adds that an evidentiary hearing is necessary to resolve whether the project is overbuilt.

21. A trial type hearing is appropriate where resolution of the controversy would be facilitated by cross-examination of witnesses. Coalition correctly cites *Cajun Electric Power Co-op., Inc. v. FERC (Cajun)*<sup>25</sup> as stating that the Commission must hold a hearing to resolve disputed issues of material fact; however, the *Cajun* court goes on to

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<sup>24</sup> See William Huston September 9, 2014 Motion to Intervene and Request for Full Hearing.

<sup>25</sup> 28 F.3d 173 (D.C. Cir. 1994).

say that the Commission “need not conduct such a hearing if [the disputed issues] may be adequately resolved on the written record.”<sup>26</sup>

22. Here, we found that the written record was sufficient for us to resolve any material issue of fact, and therefore, we conducted a paper proceeding. We addressed Mr. Huston’s concerns and Coalition’s additional concern in the final EIS and the March 3 Order. Neither discovery nor cross-examination was necessary to address Mr. Huston’s and Coalition’s arguments.

**B. Conditioned Approval and Section 401 of Clean Water Act**

23. Section 401 of the Clean Water Act (CWA) provides that no federal “license or permit shall be granted until the” state certifies that any activity “which may result in a discharge into the navigable waters” will comply with the applicable provisions of the Act.<sup>27</sup> Several rehearing applicants argue that the Commission violated section 401 of the CWA by issuing a conditioned certificate order before the respective state agencies in Connecticut, Massachusetts, and New York had issued their water quality certifications for the proposed project. They argue that the language of section 401 is unambiguous when it states that “[n]o license or permit shall be granted until the certification required by this section has been obtained or has been waived . . . .”<sup>28</sup> The rehearing applicants also cite *PUD No. 1 of Jefferson County v. Washington Department of Ecology* and *City of Tacoma, Washington v. FERC* to bolster their argument that the Commission cannot issue a certificate order before a state issues its CWA section 401 water quality certification.<sup>29</sup>

24. The rehearing applicants argue that by issuing the certificate first, the Commission usurped the states’ authority to issue their own, potentially more stringent, conditions. Rehearing applicants assert that the Commission cannot override the section 401 bar by relying on the Commission’s authority under section 7(e) of the NGA. Rehearing applicants add that the certificate order limits the state’s power by requiring that “any state or local permits issued with respect to the jurisdictional facilities authorized herein must be

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<sup>26</sup> *Id.* at 177. See also *Louisiana Ass’n of Independent Producers and Royalty Owners v. FERC*, 958 F.2d 1101, 1113-15 (D.C. Cir. 1992).

<sup>27</sup> 33 U.S.C. § 1341(a) (2012).

<sup>28</sup> See, e.g., Mr. Harckham April 1, 2015 Rehearing Request at 3 (citing 33 U.S.C. § 1341(a)(1) (2012)).

<sup>29</sup> *Id.* (citing and *PUD No. 1 of Jefferson County v. Washington Dept. of Ecology*, 511 U.S. 700, 707 (1994); *City of Tacoma, Washington v. FERC*, 460 F.3d 53, 67-68 (D.C. Cir. 2006)).

consistent with the conditions of this certificate.”<sup>30</sup>

25. As an initial matter, we note that the respective state water quality agencies in the States of Connecticut, Massachusetts, and New York have all issued their section 401 water quality certifications. In fact, Massachusetts Department of Environmental Protection issued its water quality certification on November 14, 2014, before the Commission’s March 3 authorization of the AIM Project.<sup>31</sup> Therefore, the rehearing applicants’ argument on whether our March 3 Order violates the CWA is moot.

26. Even so, our March 3 Order complies with the CWA. The Commission routinely issues certificates for natural gas pipeline projects subject to the federal permitting requirements of the CWA, among other statutes. The practical reason is that, in spite of the best efforts of those involved, it may be impossible for an applicant to obtain all approvals necessary to construct and operate a project in advance of the Commission’s issuance of its certificate without unduly delaying the project. It is entirely appropriate for the Commission to issue an NGA certificate conditioned on the certificate holder subsequently obtaining necessary permits under other federal laws. Section 7(e) of the NGA vests the Commission with broad power to attach to any certificate of public convenience and necessity “such reasonable terms and conditions” as it deems appropriate.<sup>32</sup>

27. The order is an “incipient authorization without current force or effect,” since it does not allow the pipeline to begin the activity it proposes before the relevant environmental conditions are satisfied.<sup>33</sup> Section 401(a)(1) of the CWA prohibits licenses

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<sup>30</sup> March 3 Order, 150 FERC ¶ 61,163, at P 151.

<sup>31</sup> On March 9, 2015, the Connecticut Department of Energy and Environmental Protection issued its section 401 water quality certification, and on May 5, 2015, the New York Department of Environmental Conservation issued its section 401 water quality certification.

<sup>32</sup> 15 U.S.C. § 717f(e) (2012). *See also Iroquois Gas Transmission System, L.P.*, 52 FERC ¶ 61,091, at 61,402 n.195 (1990) (“The Commission has a longstanding practice of issuing certificates conditioned on the completion of environmental work or the adherence by the applicants to environmental conditions”) (citing *Texas Eastern Transmission Corp.*, 47 FERC ¶ 61,341 (1989); *CNG Transmission Corp.*, 51 FERC ¶ 61,267 (1990); *Columbia Gas Transmission Corp.*, 48 FERC ¶ 61,050 (1989)).

<sup>33</sup> *Crown Landing LLC*, 117 FERC ¶ 61,209, at P 21 (2006). *See also Pub. Utils. Comm’n of Cal.*, 900 F.2d 269, 282 (D.C. Cir. 1990) (finding that the Commission did not err in granting certificate before environmental hearing was finished because agency can make “even a final decision” as long as it assesses the environmental data before the (continued ...)

or permits that allow the licensee or permittee “to conduct any activity . . . which may result in any discharge into the navigable waters.”<sup>34</sup> Consistent with such language, the March 3 Order ensured that until Connecticut, Massachusetts, and New York issued their water quality certifications, Algonquin could not begin an activity in the respective state that may result in a discharge into navigable waters.<sup>35</sup> Indeed, the rehearing applicants have not identified any activities authorized by the March 3 Order that may have resulted in such discharge before state approval or Commission staff’s issuance of a notice to proceed. In fact, Commission staff issued all of its notices to proceed to begin construction of a pipeline segment that could result in a discharge after Connecticut, New York, and Massachusetts issued their water quality certifications.<sup>36</sup>

28. Conditioned certificates are a common Commission practice, affirmed by the courts. In *Myersville Citizens for a Rural Community, Inc. v. FERC*,<sup>37</sup> the D.C. Circuit found that the Commission had not violated the NGA or the Clean Air Act by conditioning its approval of new compressor station on the review process required by the Clean Air Act. The D.C. Circuit stated “. . . the certificate order has only whatever preemptive force it can lawfully exert, and no more. It did not purport to contravene the Natural Gas Act’s savings clause [15 U.S.C. § 717b(d)(3) (2012)]. Nor did it purport to compel the [Maryland Department of Environment’s] interpretation of Maryland’s SIP.”<sup>38</sup> Similarly, in *City of Grapevine v. Department of Transportation*,<sup>39</sup> the D.C. Circuit upheld the use of analogous federal conditioning authority. There, the court found that the U.S. Department of Transportation had not violated the National Historic Preservation Act by conditioning its approval of a new airport runway on the review process required by that federal statute.<sup>40</sup> In contrast, the cases that the rehearing applicants cite in support are inapplicable

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decision’s effective date); *Finavera Renewables Ocean Energy, Ltd.*, 122 FERC ¶ 61,248, at P 15 (2008).

<sup>34</sup> 33 U.S.C. § 1341(a) (2012).

<sup>35</sup> See March 3 Order, 150 FERC ¶ 61,163, at Environmental Condition 9.

<sup>36</sup> On April 13, 2015, Commission staff did issue a notice to proceed to use four ware yards.

<sup>37</sup> *Myersville*, 783 F.3d 1301 (D.C. Cir. 2015).

<sup>38</sup> *Id.* at 1321.

<sup>39</sup> *City of Grapevine, Tex. v. Dep’t of Transp.*, 17 F.3d 1502 (D.C. Cir. 1994).

<sup>40</sup> *Id.* at 1508-09.

as they do not evaluate the Commission's authority to condition its project approval on the successful completion of the state review process required by the CWA.<sup>41</sup>

29. We also find no merit in the claim that the March 3 Order limits state authority to issue state water quality conditions. Section 401(d) of the CWA states that any limitations or monitoring prescribed in the water quality certification to ensure that the applicant will comply with federal or state standards under the CWA shall become conditions of the federal license or permit and thus control the construction and operation of the project.<sup>42</sup> The Commission did not authorize Algonquin to disturb the environment before the states acted.

30. Further, our preemption language that the rehearing applicants cite does not apply to section 401 water quality certifications, which are federal permits administered by the respective state agency.<sup>43</sup> Accordingly, we deny rehearing on these issues.

### **C. Preemption**

31. Mr. Harckham and the West Roxbury Intervenors raise preemption arguments on rehearing. Mr. Harckham states that New York State's parkland alienation law requires Algonquin to receive approval from the New York State Legislature in order to obtain its proposed additional temporary workspace area outside its existing easement in the Blue Mountain Reservation.<sup>44</sup> Mr. Harckham argues that the NGA will not preempt the

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<sup>41</sup> *S.D. Warren Co. v. Maine Bd. of Env'tl. Prot.*, 547 U.S. 370 (2006) (regarding whether an operating dam to produce hydroelectricity may discharge into navigable waters of the United States and would thus require a section 401 water quality certification); *PUD No. 1 of Jefferson Cty. v. Wash. Dep't of Ecology*, 511 U.S. 700 (1994) (regarding minimum stream flow rates as part of a section 401 water quality certificate); *City of Tacoma v. FERC*, 460 F.3d 53 (D.C. Cir. 2006) (requiring the Commission to seek affirmation from the state agency that it complied with state law notice requirements when it issued its water quality certification); *State of N.C. v. FERC*, 112 F.3d 1175 (D.C. Cir. 1997) (regarding whether a decrease in volume of a preexisting discharge at a hydropower project required a section 401 water quality certification before the Commission issued a license amendment).

<sup>42</sup> 33 U.S.C. § 1341(d) (2012).

<sup>43</sup> See *Islander E. Pipeline Co. et al.*, 102 FERC ¶ 61,054, at P 115 (2003) ("While state and local permits are preempted under the NGA, state authorizations required under federal law are not.").

<sup>44</sup> The requirement that a municipality obtain legislative authorization to alienate parkland is founded in New York State case law and common law. See *State of* (continued ...)

parkland alienation law in New York because the parkland alienation law is unrelated to the regulation of natural gas facilities and does not involve state public service commissions as was the case in the preemption cases, *Schneidewind v. ANR Pipeline Company*<sup>45</sup> and *Natural Fuel Gas Supply v. Public Service Commission*.<sup>46</sup> Moreover, Mr. Harckham argues that the Commission's certificate should not preempt the parkland alienation law because the environmental conditions in a Commission certificate inadequately avoid environmental harms and would conflict with state delegated authority under the Clean Air Act and Clean Water Act.

32. West Roxbury Intervenors argue that Article 97 of the Massachusetts Constitution<sup>47</sup> would apply to the West Roxbury Lateral's route along certain streets and across the Gonzalez Field in the Town of Dedham, Massachusetts. Article 97 mandates that a change in use or a disposal of lands held for public purposes must be approved by a two-thirds vote from both houses of the Massachusetts Legislature. While West Roxbury Intervenors acknowledge that the NGA grants the Commission broad authority to regulate interstate pipelines, West Roxbury Intervenors appear to argue that federal preemption should be limited in this case because Algonquin has not demonstrated project need or that the gas supplies will not be exported.<sup>48</sup>

33. The Commission does not take preemption lightly. Whether or not a state or local law is related to natural gas activities or public service commissions, the NGA and the Commission's regulations implementing that statute generally preempt state and local law that conflict with federal regulation, or would unreasonably delay the construction and operation of facilities approved by the Commission.<sup>49</sup> The Commission, however,

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New York, New York State Office of Parks, Recreation and Historic Preservation, *Handbook on the Alienation and Conversion of Municipal Parkland in New York* at 7 (2012), <http://parks.ny.gov/publications/documents/AlienationHandbook.pdf>.

<sup>45</sup> 485 U.S. 293 (1988).

<sup>46</sup> 894 F.2d 571 (2d Cir. 1990).

<sup>47</sup> Mass. Const. Amend. Art. 97 (2015).

<sup>48</sup> We note the March 3 Order found that Algonquin demonstrated need for the AIM Project, and that there is no evidence that the natural gas supplies transported on the project will be exported. See March 3 Order, 150 FERC ¶ 61,163, at PP 22-25.

<sup>49</sup> See *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 243 (D.C. Cir. 2013) (holding state and local regulation is preempted by the NGA to the extent they conflict with federal regulation, or would delay the construction and operation of facilities approved by the Commission); (continued ...)

encourages applicants to cooperate with state and local agencies regarding the location of pipeline facilities, environmental mitigation measures, and construction procedures.

34. That a state or local authority requires something more or different than the Commission does not necessarily make it unreasonable for an applicant to comply with both the Commission's and state or local agency's requirements. It is true that additional state and local procedures or requirements could impose more costs on an applicant or cause some delays in constructing a pipeline. Not all additional costs or delays, however, are unreasonable in light of the Commission's goal to include state and local authorities to the extent possible in the planning and construction activities of pipeline applicants. The Commission's practice of encouraging cooperation between interstate pipelines and local authorities does not mean, however, that those agencies may use their regulatory requirements to undermine the force and effect of a certificate issued by the Commission.<sup>50</sup> A rule of reason must govern both the state and local authorities' exercise of their power and an applicant's bona fide attempts to comply with state and local requirements.

35. If a conflict arises between the requirements of a state or local agency and the Commission's certificate conditions, the principles of preemption will apply and the federal authorization will preempt the state or local requirements. Having said this, we note that the Commission cannot act as a referee between applicants and state and local authorities regarding each and every procedure or condition imposed by such agencies. In the event compliance with a state or local condition conflicts with a Commission certificate, parties are free to bring the matter before a Federal court for resolution.

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*Iroquois Gas Transmission System, L.P.*, 52 FERC ¶ 61,091 (1990) and 59 FERC ¶ 61,094 (1992).

<sup>50</sup> See *Dominion Transmission, Inc.*, 141 FERC ¶ 61,240, at P 68 (2012) (finding “state and local regulation is preempted by the NGA to the extent they conflict with federal regulation, or would delay the construction and operation of facilities approved by this Commission.”) See also *Transcontinental Gas Pipe Line Corp., LLC*, 145 FERC ¶ 61,152, at P 75 n.36 (2013).



36. In response to Mr. Harckham's comments, we emphasize that state permits required under federal law are not preempted by the NGA.<sup>51</sup> Further, as discussed below, we also find that the final EIS found based on substantial evidence that impacts to the Blue Mountain Reservation would be adequately minimized.<sup>52</sup>

#### **D. Certificate Policy Statement**

##### **1. Project Need**

37. Several rehearing applicants argue that the Commission failed to demonstrate project need as required by the public convenience and necessity and the Certificate Policy Statement. Town of Dedham argues that the Commission should evaluate project need on a regional basis. Coalition and West Roxbury Intervenors argue that Algonquin cannot demonstrate need for the AIM Project when other alternatives may serve the demand, such as alternative energy sources (i.e., wind, solar, geothermal, and kinetic technologies), importing liquefied natural gas (LNG), and repairing leaking natural gas pipelines.

38. In support of repairing leaking gas pipelines, Coalition and West Roxbury Intervenors cite a *Boston Globe* article summarizing a study, published after the final EIS, conducted by Harvard University scientists.<sup>53</sup> The study evaluated methane emissions from leaking natural gas distribution pipelines in the greater Boston area (Boston Methane Emissions Study). Coalition argues that repairing pipelines should have been considered because it is consistent with the Commission's cost-recovery policy.<sup>54</sup> Coalition and West Roxbury Intervenors also for the first time on rehearing introduce new findings from the February 2015 U.S. Department of Energy report, "Natural Gas Infrastructure Implications of Increased Demand from the Electric Power Sector" (DOE Report), which studies the

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<sup>51</sup> See *Islander E. Pipeline Co. et al.*, 102 FERC ¶ 61,054, at 61,130 (2003) ("While state and local permits are preempted under the NGA, state authorizations required under federal law are not.").

<sup>52</sup> See paragraphs 164-167 of this order.

<sup>53</sup> Kathryn McKain *et al.*, *Methane emissions from natural gas infrastructure and use in the urban region of Boston, Massachusetts*, PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, February 17, 2015, <http://www.pnas.org/content/112/7/1941.full.pdf?sid=5a42b412-77c8-4326-a6d4-bccd7c4ac13> (Boston Methane Emissions Study).

<sup>54</sup> See *Cost Recovery Mechanisms for Modernization of Natural Gas Facilities*, 151 FERC ¶ 61,047 (2015).

potential infrastructure needs of the U.S. interstate natural gas pipeline transmission system under multiple future natural gas demand scenarios.<sup>55</sup> The DOE Report, they argue, states that diverse sources of natural gas supply and demand as well as the increased utilization of existing interstate natural gas infrastructure will reduce the need for additional interstate natural gas pipeline infrastructure.<sup>56</sup>

39. We reaffirm our March 3 Order's finding that Algonquin demonstrated project need for the AIM Project.<sup>57</sup> Algonquin executed long-term firm transportation agreements with its ten Project Shippers for the full capacity being offered, which the Certificate Policy Statement states constitutes "significant evidence of demand for the project."<sup>58</sup> It is Commission policy to not look beyond precedent or service agreements to make judgments about the needs of individual shippers.<sup>59</sup> The D.C. Circuit affirmed this policy in *Minisink Residents for Environmental Preservation & Safety v. FERC*,<sup>60</sup> finding that the petitioners

identify nothing in the policy statement or in any precedent construing it to suggest that it requires, rather than permits, the Commission to assess a project's benefits by looking beyond

the market need reflected by the applicant's existing contracts

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<sup>55</sup> U.S. Department of Energy, *Natural Gas Infrastructure Implications of Increased Demand from the Electric Power Sector* (2015), [http://energy.gov/sites/prod/files/2015/02/f19/DOE%20Report%20Natural%20Gas%20Infrastructure%20V\\_02-02.pdf](http://energy.gov/sites/prod/files/2015/02/f19/DOE%20Report%20Natural%20Gas%20Infrastructure%20V_02-02.pdf) (DOE Report).

<sup>56</sup> *Id.* at vi.

<sup>57</sup> March 3 Order, 150 FERC ¶ 61,163, at PP 22-25.

<sup>58</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227, at 61,748 (1999), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000) (Certificate Policy Statement).

<sup>59</sup> *See id.*, 61,744 (citing *Transcontinental Gas Pipe Line Corp.*, 82 FERC ¶ 61,084, at 61,316 (1998)). Indeed, since the advent of unbundling and open-access transportation, it is often impossible to discern who the ultimate consumers of gas transported under any particular agreement will be.

<sup>60</sup> *Minisink Residents for Envtl. Pres. & Safety v. FERC*, 762 F.3d 97 (D.C. Cir. 2014) (*Minisink*).

with shippers.<sup>61</sup>

40. We decline the Town of Dedham's request for an assessment of project need on a regional basis. Under the Certificate Policy Statement, the Commission considers all relevant factors reflecting on the need for the project. Although not the exclusive means of establishing need, precedent agreements "always will be important evidence of demand for a project."<sup>62</sup> Here, Algonquin has executed precedent agreements with the shippers for 15-year firm transportation service agreements subscribing the entire 342,000 Dth per day of service that will be created by the AIM Project. In addition, all of the shippers are local distributors of gas to residential and commercial end users in their service areas and will use the expansion capacity on Algonquin's pipeline system to receive system supplies. Given this strong evidence of market demand for the project under review, the Commission does not believe it is necessary in this case to separately assess need across the region.

41. Notwithstanding our finding that Algonquin's executed long-term firm transportation agreements with its ten Project Shippers for the full capacity being offered demonstrates need under the Certificate Policy Statement, we note that, as stated in the March 3 Order, staff's environmental review considered the potential for energy conservation and renewable energy sources to serve as alternatives to the AIM Project. Staff's review, however, concluded that these alternatives were not practical project alternatives. We agreed, and also stated that we cannot assume that the Project Shippers failed to consider the feasibility of additional gas storage, including LNG storage, before committing to additional pipeline capacity. Nor can we assume that project shippers failed to consider importing natural gas to LNG import facilities.<sup>63</sup>

42. Similarly, Commission staff was not required to consider repairing leaking pipelines as an alternative. Section 102(C)(iii) of the National Environmental Policy Act of 1969 (NEPA) requires an agency to discuss in its environmental document alternatives to the proposed action.<sup>64</sup> While the Council on Environmental Quality's (CEQ) regulations require agencies to evaluate all reasonable alternatives,<sup>65</sup> CEQ provides that agencies need to only consider feasible alternatives and not remote and conjectural

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<sup>61</sup> *Id.* at 111 n.10.

<sup>62</sup> Certificate Policy Statement, 88 FERC P 61,227 at 61,748.

<sup>63</sup> *See* March 3 Order, 150 FERC ¶ 61,163, at P 25.

<sup>64</sup> 42 U.S.C. § 4332(C)(iii) (2012).

<sup>65</sup> *See* 40 C.F.R. § 1502.14 (2015).

alternatives.<sup>66</sup> The Boston Methane Emissions Study, which was issued after the final EIS, approximates that 15 billion cubic feet (Bcf) of methane is emitted annually in the Greater Boston Area.<sup>67</sup> In comparison, the AIM Project will provide 342,000 Dth per day of additional firm transportation service, potentially delivering more than 100 Bcf per year of natural gas. Therefore, the repair of leaking pipelines is not a reasonable alternative to the AIM Project as there would still be a need for delivery of additional natural gas supplies. Further, the AIM Project is an expansion project, with the entirety of the replacement pipe being a larger diameter than the current pipe. Thus, Algonquin's current pipeline system is too small to handle the additional volumes, invalidating this option as an alternative.

43. We also need not consider the DOE Report as the Commission has a longstanding policy to not accept additional evidence at the rehearing stage of a proceeding, absent a compelling showing of good cause.<sup>68</sup> Even so, the DOE Report does not undermine our finding that Algonquin has demonstrated project need. The DOE Report studies the potential aggregate infrastructure needs of the U.S. interstate natural gas pipeline transmission system under multiple future natural gas demand scenarios. The DOE Report does not, however, evaluate the need for natural gas infrastructure in any specific region, including New England.

## **2. Landowner Impact**

44. Boston Delegation argues that the Commission violated the Certificate Policy Statement by concluding, without evidentiary support, that Algonquin had taken steps to minimize adverse safety impacts on landowners and surrounding communities.

45. Boston Delegation misconstrues our Certificate Policy Statement discussion regarding landowner impacts. Our discussion on landowner impacts is concerned with the pipeline's use of eminent domain authority and the steps the pipeline has taken to minimize the economic impacts on landowners. Safety impacts are evaluated in the

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<sup>66</sup> CEQ, *Guidance Regarding NEPA Regulations*, at 9 (1983), [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-GuidanceRegulations.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-GuidanceRegulations.pdf). See also CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act*, at 4 (1981), <http://energy.gov/nepa/downloads/forty-most-asked-questions-concerning-ceqs-national-environmental-policy-act> ("Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense.").

<sup>67</sup> Boston Methane Emissions Study at 1945.

<sup>68</sup> See, e.g., *Tennessee Gas Pipeline Co., L.L.C.*, 142 FERC ¶ 61,025, at P 28 (2013); *Nevada Power Co.*, 111 FERC ¶ 61,111, at P 10 (2005).

Commission's NEPA environmental analysis. As discussed below, the Commission did conduct a careful safety review, as demonstrated by section 4.12 of the final EIS.<sup>69</sup>

**E. Segmentation of the Atlantic Bridge and Access Northeast Projects from Commission Staff's Environmental Review**

46. CEQ regulations require the Commission to include “connected actions,” “cumulative actions,” and “similar actions” in its NEPA analyses.<sup>70</sup> “An agency impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration.”<sup>71</sup> “Connected actions” include actions that: (a) automatically trigger other actions, which may require an EIS; (b) cannot or will not proceed without previous or simultaneous actions; (c) are interdependent parts of a larger action and depend on the larger action for their justification.<sup>72</sup>

47. In evaluating whether connected actions are improperly segmented, courts apply a “substantial independent utility” test. The test asks “whether one project will serve a significant purpose even if a second related project is not built.”<sup>73</sup> For proposals that connect to or build upon an existing infrastructure network, this standard distinguishes between those proposals that are separately useful from those that are not. Similar to a highway network, “it is inherent in the very concept of” the interstate pipeline grid “that each segment will facilitate movement in many others; if such mutual benefits compelled

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<sup>69</sup> See final EIS at 4-264 to 4-282.

<sup>70</sup> 40 C.F.R. § 1508.25(a)(1)-(3) (2015).

<sup>71</sup> *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014). Unlike connected and cumulative actions, analyzing similar actions is not always mandatory. See *San Juan Citizens' Alliance v. Salazar*, CIV.A.00CV00379REBCBS, 2009 WL 824410, at \*13 (D. Colo. 2009) (citing 40 C.F.R. § 1508.25(a)(3) for the proposition that “nothing in the relevant regulations compels the preparation of a single EIS for ‘similar actions’.”).

<sup>72</sup> 40 C.F.R. § 1508.25(a)(1)(i)-(iii) (2015).

<sup>73</sup> *Coal. on Sensible Transp., Inc. v. Dole*, 826 F.2d 60, 69 (D.C. Cir. 1987). See also *O'Reilly v. U.S. Army Corps of Eng'rs*, 477 F.3d 225, 237 (5th Cir. 2007) (defining independent utility as whether one project “can stand alone without requiring construction of the other [projects] either in terms of the facilities required or of profitability.”).

aggregation, no project could be said to enjoy independent utility.”<sup>74</sup>

48. In *Del. Riverkeeper Network v. FERC (Del. Riverkeeper)*, the court ruled that individual pipeline proposals were interdependent parts of a larger action where four pipeline projects, when taken together, would result in “a single pipeline” that was “linear and physically interdependent” and where those projects were financially interdependent.<sup>75</sup> The court put a particular emphasis on the four projects’ timing, noting that, when the Commission reviewed the proposed project, the other projects were either under construction or pending before the Commission.<sup>76</sup> Courts have indicated that, in considering a pipeline application, the Commission is not required to consider in its NEPA analysis other potential projects for which the project proponent has not yet filed an application, or where construction of a project is not underway.<sup>77</sup> Further, the Commission need not jointly consider projects that are unrelated and do not depend on each other for their justification.<sup>78</sup>

49. In the March 3 Order, we dismissed the argument that the AIM Project was improperly segmented from Algonquin’s and its affiliate Maritimes & Northeast Pipeline, L.L.C.’s (Maritimes)<sup>79</sup> Atlantic Bridge Project and Algonquin’s Access Northeast Project, which were at the time both contemplated expansion projects. The March 3 Order found that because an application was not yet filed for either the Atlantic Bridge Project or the Access Northeast Project, neither project was a proposal, and without a proposal, improper

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<sup>74</sup> *Coal. on Sensible Transp., Inc. v. Dole*, 826 F.2d at 69.

<sup>75</sup> *Del. Riverkeeper*, 753 F.3d at 1308.

<sup>76</sup> *Id.*

<sup>77</sup> *Minisink*, 762 F.3d at 113 n.11 (D.C. Cir. 2014). *See also Weinberger v. Catholic Action of Haw.*, 454 U.S. 139, 146 (“... an EIS need not be prepared simply because a project is *contemplated*, but only when the project is *proposed*”) (emphasis in original); *Del. Riverkeeper*, 753 F.3d at 1318 (“NEPA, of course, does not require agencies to commence NEPA reviews of projects not actually proposed.”)

<sup>78</sup> *See Myersville*, 783 F.3d at 1326.

<sup>79</sup> Maritimes is a joint venture of Spectra, Emera, Inc., and ExxonMobil. Maritimes pipeline system extends approximately 684 miles and transports natural gas from developments offshore Nova Scotia to markets in Atlantic Canada and the northeastern United States. The Atlantic Bridge Project will modify the Maritimes system to be bidirectional.

segmentation did not apply.<sup>80</sup> Even so, the March 3 Order discussed the potential cumulative impact that the AIM Project would have when added to the Atlantic Bridge and Access Northeast Projects.<sup>81</sup>

50. Since the March 3 Order, Algonquin and Maritimes filed their application for the Atlantic Bridge Project, and Algonquin requested Commission approval to use the pre-filing process for the Access Northeast Project.<sup>82</sup>

51. The Atlantic Bridge Project as proposed is designed to provide capacity to enable Algonquin to provide 132,705 Dth per day of firm transportation service, and Maritimes to provide 106,276 Dth per day of firm transportation service, to project shippers. Algonquin will provide service on its system from receipt points at Mahwah, New Jersey, and Ramapo, New York, to various new and existing delivery points on Algonquin's system in Massachusetts and Maine, including its interconnection with Maritimes in Beverly, Massachusetts. The Atlantic Bridge Project will consist of 6.3 miles of replacement pipeline across two segments, and 26,500 hp of new compression through the modification of three existing compressor stations and the construction of a new compressor station. These activities will occur in New York, Connecticut, and Massachusetts, and some of these activities may physically overlap or abut with AIM Project facilities, including modifications to the Stony Point, Oxford, and Chaplin Compressor Stations and pipeline installations in Westchester County, New York; Fairfield County, Connecticut; and Norfolk County, Massachusetts.

52. Details regarding the Access Northeast Project are limited. In its request to use the pre-filing process, Algonquin states that it has executed memoranda of understanding with seven electric distribution companies. Further, currently Algonquin anticipates that the Access Northeast Project will consist of 123 miles of various pipeline facilities; modifications to seven existing compressor stations; construction of a new compressor station; construction of associated facilities, such as meter stations; and the construction of an LNG peaking facility. These activities will occur in New York, Connecticut, Rhode Island, and Massachusetts, and some of these activities may physically overlap or abut with AIM Project facilities, including modifications to the Stony Point, Southeast, Burrillville, and Chaplin Compressor Stations and pipeline installations in Rockland,

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<sup>80</sup> See March 3 Order, 150 FERC ¶ 61,163, at P 110.

<sup>81</sup> See *id.* PP 117-119.

<sup>82</sup> On October 22, 2015, Algonquin and Maritimes filed their application for the Atlantic Bridge Project in Docket No. CP16-9-000. On November 3, 2015, Algonquin requested Commission approval to initiate the pre-filing review process for the Access Northeast Project in Docket No. PF16-1-000.

Putnam, and Westchester Counties, New York; Fairfield and Hartford Counties, Connecticut; and Norfolk County, Massachusetts.

53. Several rehearing applicants renew their argument that the Commission improperly segmented the environmental review of the AIM Project from that of the Atlantic Bridge and Access Northeast Projects.

**1. Atlantic Bridge and Access Northeast Projects did not Constitute Proposals**

54. As noted above, the courts have found that the Commission is not required to consider in its NEPA analysis other potential projects for which the project proponent has not yet filed an application.<sup>83</sup> Section 102(C) of NEPA requires agencies to prepare an environmental document for “proposals” for major federal actions affecting the human environment.<sup>84</sup> The CEQ’s regulations state that “proposals” exist when the action is at the stage when an agency “has a goal and is actively preparing to make a decision . . . and the effects [of that action] can be meaningfully evaluated.”<sup>85</sup> The courts have described proposed actions as “proposals in which action is imminent.”<sup>86</sup>

55. The rehearing applicants argue that the Atlantic Bridge Project was a proposal because it was in pre-filing and therefore could be meaningfully evaluated. Riverkeeper states that at the pre-filing stage, the Commission’s immediate goal is determining whether and to what extent a project will be subject to NEPA environmental review. Mr. Harckham argues that being in pre-filing means there is a proposal because it is reasonably foreseeable that the pipeline in pre-filing will file an application. Further, Mr. Harckham argues that because Commission staff analyzed the cumulative effects of the Atlantic Bridge Project, the Commission admitted that the project was a proposal. As for the Access Northeast Project, Riverkeeper argues it was a proposal because Algonquin publicly announced the project and said it planned to begin pre-filing later in the year. In addition, Riverkeeper argues that the *Transcontinental Gas Pipe Line Company, LLC*<sup>87</sup>

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<sup>83</sup> See *supra* note 79.

<sup>84</sup> 42 U.S.C. § 4332(2)(C) (2012).

<sup>85</sup> 40 C.F.R. § 1508.23 (2015).

<sup>86</sup> *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, 531 F.3d 1220, 1229 (10th Cir. 2008) (citing *O’Reilly v. U.S. Army Corps of Eng’rs*, 477 F.3d 225, 236 (5th Cir. 2007)).

<sup>87</sup> 149 FERC ¶ 61,258 (2014).



case, which the March 3 Order cites in support of its argument that the Atlantic Bridge and Access Northeast Projects were not proposals, is inapposite to the facts here.

56. By finding that the Atlantic Bridge and Access Northeast Projects did not constitute proposals, Allegheny and Riverkeeper assert that the Commission allowed Algonquin to shield its broader plans from a more comprehensive review. Riverkeeper adds that the Commission's alleged segmentation inhibited the public's ability to evaluate project costs to the environment and communities.

57. We disagree. A project at the pre-filing stage is not a proposal, but is in its early stages of development and the NEPA process. The purpose of pre-filing is to involve interested stakeholders early in project planning and to identify and resolve issues before an application is filed.<sup>88</sup> Commission staff gathers information for its environmental review and solicits the public's and agencies' participation. Commission staff then determines the scope of issues to be addressed and identifies the significant environmental issues related to a proposed action. By raising environmental issues at an early stage, we avoid a situation where the pipeline completes planning and eliminates all alternatives to the proposed action before staff commences its environmental review.<sup>89</sup>

58. When Commission staff conducted and completed its environmental review, both the Atlantic Bridge and Access Northeast Projects were in the early stages of project development. On January 30, 2015, Algonquin and Maritimes, had only requested Commission approval for the pre-filing process for the Atlantic Bridge Project, which Commission staff approved on February 20, 2015. On April 27, 2015, nearly two months after the March 3 Order's issuance, Commission staff began its environmental scoping process when it issued a *Notice of Intent to Prepare an Environmental Assessment for the Planned Atlantic Bridge Project*. As for the Access Northeast Project, Spectra had only announced the project on its website. The Atlantic Bridge and Access Northeast Projects were far from proposals in which action was imminent.

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<sup>88</sup> See *Weaver's Cove Energy, LLC*, 107 FERC ¶ 61,022, at P 11 (2004).

<sup>89</sup> Our pre-filing process is consistent with section 1501.2(d) of the CEQ regulations, which provide in pertinent part:

Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts.

40 C.F.R. § 1501.2 (2015).

59. Projects that are in the early stages of development have uncertain futures. Not all projects that enter the pre-filing process go on to be proposed in applications. In almost all cases, projects in the pre-filing process change in project scope, facilities, or location before an application is filed. Indeed, Algonquin reduced the size of the AIM Project during the pre-filing process. As Riverkeeper points out, Algonquin removed four of six miles of proposed pipeline in Yorktown and Sommers, New York, during the pre-filing process to match customer commitments. The removed facilities are currently contemplated as part of the Atlantic Bridge Project, which itself evolved based on customer agreements.

60. The Atlantic Bridge Project has been modified to eliminate originally contemplated facilities since Commission staff evaluated it in the AIM Project's final EIS using the generic details provided by Algonquin in September 2014. In January 2015, Algonquin and Maritimes filed a pre-filing request letter for the Atlantic Bridge Project that stated the scope of the project included fewer miles of pipe and less compression than the preliminary details that Algonquin previously provided. Since the time of that filing, the Atlantic Bridge Project has undergone even more changes, further reducing its scope.<sup>90</sup> As projects before and in the pre-filing stage are uncertain, without an application, the Commission cannot actively prepare to make a decision on the projects and the effects of the projects cannot be meaningfully evaluated.

61. Our finding is not inconsistent with our decision in the *Transcontinental Gas Pipe Line Co., LLC* case as Riverkeeper contends. Similar to the facts here, in that case the Commission found that two projects, among others, were not connected to the Leidy Project: one project that was in pre-filing (Atlantic Sunrise Project) and one project that had not reached pre-filing stage (Diamond East Project).<sup>91</sup> The Commission explained that

it did not have a proposal in front of it for either project to sufficiently examine the projects' environmental or landowner impacts.<sup>92</sup>

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<sup>90</sup> The Atlantic Bridge Project's design capacity was reduced by approximately 40 percent since the final EIS was issued (from 220,000 Dth per day to 137,705 Dth per day); its replacement pipeline was reduced by approximately 88 percent (52.5 miles to 6.3 miles); and the total additional compression was reduced by 11 percent (29,530 hp to 26,500 hp).

<sup>91</sup> 149 FERC ¶ 61,258, at PP 64-66.

<sup>92</sup> *Id.*

62. Although the final EIS evaluates the cumulative impacts of the Atlantic Bridge Project, doing so does not mean that we found the Atlantic Bridge Project to constitute a proposal. A cumulative impacts analysis is not limited to the cumulative impacts that can be expected from proposed actions. Rather the cumulative impacts analysis extends to impacts that can be anticipated from proposed actions and “reasonably foreseeable actions,” i.e. contemplated actions.<sup>93</sup> CEQ regulations “mandate consideration of the impacts from actions that are not yet proposals and from actions – past, present, or future – that are not themselves subject to the requirements of NEPA.”<sup>94</sup> As discussed below in “Cumulative Impacts,” we appropriately considered the cumulative impacts of the Atlantic Bridge and Access Northeast Projects in accordance with NEPA and CEQ’s implementing regulations.

63. Accordingly, we find there has been no improper segmentation associated with our review of this project.

## **2. Projects are not Cumulative, Connected, or Similar Actions**

64. Rehearing applicants argue that the AIM, Atlantic Bridge, and Access Northeast Projects are connected, cumulative, and similar actions that should have been evaluated in a single EIS.

### **a. Connected Actions**

65. Citing *Del. Riverkeeper*, rehearing applicants argue that the AIM Project and the Atlantic Bridge Project are physically, temporally, and functionally connected. Riverkeeper also argues that the Access Northeast Project is also physically, temporally, and functionally connected to the AIM Project.

66. Rehearing applicants assert that the AIM and Atlantic Bridge Projects are physically connected because they involve the upgrade and expansion of Algonquin’s existing linear pipeline system in the same four states. Riverkeeper argues that both the AIM Project and the Atlantic Bridge Project involve removing an existing 26-inch-diameter pipeline and installing a 42-inch-diameter pipeline. Mr. Harckham argues that the projects are physically connected because they impact the same watershed and airshed, they abut one another, and they have overlapping construction zones. Coalition adds that the projects are also physically connected because they will provide shippers an opportunity to obtain firm transportation service from Ramapo, New York, to deliver to

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<sup>93</sup> 40 C.F.R. § 1508.7(a)(2) (2015).

<sup>94</sup> *Fritiofson v. Alexander*, 772 F.2d 1225, 1244 (5th Cir. 1985) (*Fritiofson*) overruled on other grounds by *Sabine River Auth. v. U.S. Dep’t of the Interior*, 951 F.2d 669 (5th Cir. 1992).

New England, will transport shale gas, and are intended to meet local distribution company demand in New England. Even though few details were, and are still, available on the potential Access Northeast Project, Riverkeeper argues that the Access Northeast Project is also physically connected to the AIM Project because it will occur in the same general location.

67. Rehearing applicants argue that the AIM, Atlantic Bridge, and Access Northeast Projects are temporally connected because the projects will come online sequentially one year after the other. Coalition argues that Algonquin intentionally avoided simultaneous review of its projects by filing a deficient application for the AIM Project midway through the open season for the Atlantic Bridge Project and by filing its request to begin pre-filing for the Atlantic Bridge Project one week after Commission staff issued the final EIS for the AIM Project.

68. Lastly, rehearing applicants argue that the projects are functionally connected because the finished projects will function as a unified whole, and will upgrade and expand sections of the same linear pipeline system that will deliver gas to Northeast consumers and the Maritimes pipeline system. Coalition also reasserts the argument that the AIM Project and the Atlantic Bridge Project are functionally interdependent based on a report prepared by Richard Kuprewicz, a pipeline safety expert. Mr. Kuprewicz argued that Algonquin's proposed 42-inch-diameter replacement pipeline between the Stony Point and Southeast Compressor Stations overcompensated on one portion of the system, leaving the second portion in need of upgrade and, thus, suggested that the projects had been segmented.

69. Citing *Hammond v. Norton (Hammond)*,<sup>95</sup> Coalition notes that courts recognize that permit applicants are inclined to portray a project as an independent unit to evade review and expedite the permit process. Coalition argues that the facts in this case parallel those in *Hammond*. Coalition states that like *Hammond*, presentations and press releases by Spectra, Algonquin's corporate parent, show that the AIM and Atlantic Bridge Projects have been planned as a single unit. In addition, Coalition asserts that the draft EIS comment filed by U.S. Army Corps of Engineers (Corps) states the projects are connected, thereby corroborating Coalition's claim.

70. We disagree. The AIM, Atlantic Bridge, and Access Northeast Projects are not connected actions. First, the projects are not physically connected. The AIM Project will receive gas at Ramapo, New York, and will deliver gas to its Project Shippers' various city gates. In contrast, the Atlantic Bridge Project will receive gas at both Mahwah, New Jersey, and Ramapo, New York, and will deliver gas to its Project Shippers in New England and Atlantic Canada. As for the Access Northeast Project, Algonquin has

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<sup>95</sup> *Hammond v. Norton*, 370 F. Supp. 2d 226 (D.D.C. 2005).

not provided information on where the project will receive gas, but Algonquin has stated it plans to deliver gas to seven electric distribution companies in New England at their various delivery points. The fact that some of the projects' facilities will overlap does not mean that the projects are interdependent. Connectivity by itself does not equate to interdependence. If this were the case, no project in the interstate pipeline grid could be independently proposed, evaluated, or constructed. The needs of customers with nearby geography would all be held captive by one another.

71. Second, the projects are not connected temporally. The March 3 Order explained that the AIM Project construction is planned for 2015 and 2016 whereas construction of the Atlantic Bridge Project would likely take place after that time, as the earliest projected in-service date for the Atlantic Bridge Project is November 2017, and the Access Northeast Project would at the earliest be in service by the end of 2018.<sup>96</sup>

72. While rehearing applicants contend that the timing is similar to that in *Del. Riverkeeper*, the *Del. Riverkeeper* court's rationale and concerns do not pertain to the facts here. As we noted above, the Atlantic Bridge and Access Northeast Projects were not proposals when Commission staff conducted its environmental review of the AIM Project. The *Del. Riverkeeper* court stated, "NEPA, of course, does not require agencies to commence NEPA reviews of projects not actually proposed."<sup>97</sup>

73. Moreover, the *Del. Riverkeeper* court's project timing discussion was primarily concerned that the project's environmental review did not "take into account the condition of the environment reflected in the recently related and connected upgraded."<sup>98</sup> The court explained that the prior disturbance could not be ignored in the Commission's NEPA review. Here, the final EIS for the AIM Project considered whether there would be any cumulative impacts from the AIM Project, the Atlantic Bridge Project, and the Access Northeast Project.<sup>99</sup> Further, Commission staff's current environmental review of the Atlantic Bridge Project and potential review of Access Northeast Project will also take into account the condition of the environment reflected by the authorized projects.

74. Coalition erroneously states that Algonquin filed a deficient application for the AIM Project to evade an environmental review of both the AIM and Atlantic Bridge Projects. Algonquin filed its application for the AIM Project on March 11, 2014. At that time, the

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<sup>96</sup> March 3 Order, 150 FERC ¶ 61,163, at PP 118-119.

<sup>97</sup> *Del. Riverkeeper Network*, 753 F.3d at 1318.

<sup>98</sup> *Id.*

<sup>99</sup> See final EIS at 4-288 to 4-290.

Atlantic Bridge Project was far from complete as Algonquin held a reverse open season for the project nearly a year later from January 16, through January 26, 2015. Even so, if Algonquin's application patently failed to comply with applicable statutory requirements or Commission rules for filing an application, Commission staff would have rejected Algonquin's application within ten business days.<sup>100</sup> On March 18, 2014, however, Commission staff accepted Algonquin's application.

75. Third, the projects are not functionally connected. Each project has independent utility and will serve a distinct transportation purpose. Algonquin held separate open seasons and reverse open seasons for all three projects at various periods from 2010 to 2015.<sup>101</sup> As a result of these open seasons, Algonquin executed individual precedent agreements with ten project shippers for the AIM Project, seven project shippers for the Atlantic Bridge Project, and seven memoranda of understanding for the Access Northeast Project. While there is some overlap in project shippers for the three projects, there are several other shippers that contracted for firm transportation service on the projects.<sup>102</sup> Each agreement for the AIM Project and Atlantic Bridge Project meets a project shipper's need to receive gas at a certain time. The projects also have different negotiated and recourse rates and separate in-service dates.

76. Mr. Kuprewicz's argument that Algonquin overcompensated in its design of the AIM Project and that demonstrates that the projects are functionally connected is incorrect. As confirmed by hydraulic models of Algonquin's system, Algonquin has appropriately sized the AIM Project facilities to meet the specific capacity requirements set forth by the Project Shippers. No additional facilities are needed on Algonquin's system to provide the requested services of the AIM Project Shippers and Algonquin has not over designed the

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<sup>100</sup> 18 C.F.R. § 157.8(a) (2015).

<sup>101</sup> Algonquin held an open season for the AIM Project from December 13, 2010, through February 11, 2011, and from September 20, 2012, through November 2, 2012. Algonquin held a supplemental open season and a reverse open season for AIM Project from June 11 through June 25, 2013. Algonquin held an open season for Atlantic Bridge Project from February 5, 2014, to March 31, 2014, and a reverse open season from January 16 through January 26, 2015. Algonquin held an open season for the Access Northeast Project from February 18, 2015, through May 1, 2015, and a reverse open season from October 2 through October 30, 2015.

<sup>102</sup> Norwich Public Utilities and NSTAR Gas Company are shippers in both the AIM and Atlantic Bridge Projects. The Narragansett Electric Company is a shipper in both the AIM and Access Northeast Projects.

proposed facilities to meet future expansions.

77. Contrary to Coalition's assertions, this case is not similar to *Hammond*. In *Hammond*, the court reviewed a challenge to the decision of the Bureau of Land Management (BLM) to consider two proposed pipeline projects as independent for NEPA purposes. The project was filed as a joint venture with the BLM for two pipelines to connect Salt Lake City to the national petroleum products grid. After the BLM decided to examine the entire pipeline as a single project for NEPA purposes, however, the joint venture dissolved and separate applications were filed for the two pipeline segments. The court found that the BLM improperly segmented the cases and violated NEPA based on the history of the two pipelines, the project proponents' manifest intention to circumvent the NEPA review process, and BLM's failure to support its finding that the two pipelines held independent utility.

78. Here, however, the projects do not depend on the other for access to the natural gas market and Algonquin did not jointly propose the AIM Project and Atlantic Bridge Project. While an early plan of the AIM Project included some modifications that are now part of the Atlantic Bridge Project, such a plan merely demonstrates the uncertainty of a project at its infancy stage and not that Algonquin deliberately used the pre-filing process to shield itself from a more comprehensive review. Market demand drives each application for transportation service. It is unrealistic to expect a pipeline to defer requesting approval of projects designed to serve discrete markets, and to require shippers to forgo receipt of needed service, until all projects on a pipeline's system can be packaged into one consolidated application.

79. Coalition also mischaracterizes the Corps' letter. The Corps did not find that the projects were connected. Rather, the Corps requested that the Commission elaborate on the independent utility and the cumulative impacts of these projects. Commission staff addressed the Corps' comments in the cumulative impacts section of the final EIS.<sup>103</sup>

80. Accordingly, we find that the AIM, Atlantic Bridge, and Access Northeast Projects are not connected actions as they do not share a physical, temporal, or functional nexus.

**b. Cumulative Actions**

81. Rehearing applicants also argue that the projects are cumulative actions because each would affect many of the same resources in the same area, and the combined incremental effect of each has the potential to be cumulatively significant.<sup>104</sup>

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<sup>103</sup> See final EIS at 4-288 to 4-290.

<sup>104</sup> Riverkeeper April 2, 2015 Rehearing Request at 16.

82. We disagree. Cumulative actions are those “which when viewed with other proposed actions have cumulatively significant impacts . . . .”<sup>105</sup> As stated by the Fifth Circuit Court of Appeals, actions that are merely contemplated, as opposed to proposed, are not cumulative actions:

Proposed actions with potential cumulative impacts may mandate the preparation of a regional or comprehensive impact statement, contemplated actions with potential cumulative impacts cannot . . . .<sup>106</sup>

83. Therefore, because when Algonquin filed its application for the AIM Project, the Atlantic Bridge and Access Northeast Projects were contemplated actions, they did not constitute cumulative actions. Many of the details of the Atlantic Bridge and the Access Northeast Projects had not yet been completed as the projects were in the planning and development stage. The courts have held that in such circumstance, it would be impractical for an agency to consider those actions in a single environmental document.<sup>107</sup>

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<sup>105</sup> 40 C.F.R. § 1508.25(a)(2) (2015).

<sup>106</sup> *Fritiofson*, 772 F.2d at 1242. *See also Piedmont Heights Civic Club, Inc. v. Moreland*, 637 F.2d 430, 441-42 (5th Cir. 1981) (holding that comprehensive review is not required for contemplated but not yet proposed actions under 40 C.F.R. § 1508.25(a)(2)); *Del. Riverkeeper*, 753 F.3d 1304 (D.C. Cir. 2014) (noting that “NEPA, of course, does not require agencies to commence NEPA reviews of projects not actually proposed”).

<sup>107</sup> *See Wetlands Action Network v. U.S. Army Corps of Eng’s*, 222 F.3d 1105, 1119 (9th Cir. 2000) *abrogated on other grounds by Wilderness Soc. v. U.S. Forest Serv.*, 630 F.3d 1173 (9th Cir. 2011).



84. Further, the courts have indicated that an agency is not required to analyze actions in a single EIS if that agency did not intend to segment review to minimize its cumulative impacts analysis.<sup>108</sup> Nothing in the record suggests that Commission staff's goal was to minimize its cumulative impact analysis of the AIM Project.<sup>109</sup> In fact, the March 3 Order and the final EIS explicitly discussed the cumulative impact of the AIM Project when added to the Atlantic Bridge and Access Northeast Projects. The courts have held that an agency may assess the cumulative impacts of an action but not consider that action with the proposed project in single environmental document,<sup>110</sup> and that "an agency need not revise an almost complete environmental impact statement to accommodate new proposals submitted to the agency, regardless of the uncertainty of maturation."<sup>111</sup>

**c. Similar Actions**

85. Riverkeeper contends that the projects are similar actions because they share similar project components, construction activities, and likely environmental impacts.

86. Actions are "similar" if they, when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.<sup>112</sup> Unlike connected and cumulative actions, analyzing similar actions is not always mandatory.<sup>113</sup> As the CEQ states, "[a]n agency *may* wish to analyze [similar] actions in the same impact statement. It *should* do so when the *best way* to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement."<sup>114</sup> Given that Commission staff lacked the necessary information to assess

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<sup>108</sup> *Earth Island Inst. v. U.S. Forest Serv.*, 351 F.3d 1291, 1305 (9th Cir. 2003) (*Earth Island*) (citing *Churchill Cnty v. Norton*, 276 F.3d 1060, 1079-80 (9th Cir. 2001)).

<sup>109</sup> *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 895 (9th Cir. 2002).

<sup>110</sup> *Earth Island*, 351 F.3d at 1305.

<sup>111</sup> *Theodore Roosevelt Conservation P'ship v. Salazar*, 616 F.3d 497, 514 (D.C. Cir. 2010).

<sup>112</sup> *San Juan Citizens' Alliance v. Salazar*, CIV.A.00CV00379REBCB, 2009 WL 824410, at \*13 (D. Colo. 2009) (citing 40 C.F.R. § 1508.25(a)(3) for the proposition that "nothing in the relevant regulations compels the preparation of a single EIS for 'similar actions'").

<sup>113</sup> 40 C.F.R. § 1508.25(a)(3) (2015).

potential impacts of the Atlantic Bridge and Access Northeast Projects, and that each project has independent utility, we find that a single EIS was neither required nor the best way to assess Algonquin's proposal.<sup>115</sup>

**F. Other Environmental Issues**

**1. Public Participation**

87. Coalition and Mr. Harckham argue that the draft EIS did not provide sufficient information to allow meaningful analysis because the draft EIS requested that Algonquin provide supplemental information on environmental and safety issues. These arguments were raised in comments on the draft EIS and addressed in the March 3 Order. Coalition and Mr. Harckham raise no new arguments here. Accordingly, we find no cause to respond in detail, and will deny rehearing. As the March 3 Order states, Algonquin's filings did not present new environmentally-significant information, pose substantial changes to the proposed action, or present previously undisclosed impacts, and therefore, Commission staff did not reissue a draft EIS or issue a supplemental EIS.<sup>116</sup> The public had the opportunity to comment on the supplemental information and plans requested by Commission staff and filed by Algonquin after the draft EIS was issued, and Commission staff continued to review and respond to other comments filed after the publication of the draft EIS.

88. Rehearing applicants similarly argue that the environmental conditions in the final EIS and the March 3 Order require information that should have been received and analyzed before the certificate issuance. Town of Dedham argues that the final EIS's environmental conditions demonstrate that the Commission rushed to issue the final EIS to

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<sup>114</sup> 40 C.F.R. § 1508.25(a)(3) (2015) (emphasis added). *See also Klamath-Siskiyou*, 387 F.3d 989, 1000-01 (9th Cir. 2004) (similarly emphasizing that agencies are only required to assess similar actions programmatically when such review is necessarily the *best way* to do so).

<sup>115</sup> With respect to similar actions, "an agency should be accorded more deference in deciding whether to analyze such actions together." *Klamath-Siskiyou*, 387 F.3d at 1000 (citing *Earth Island*, 351 F.3d 1291, 1306).

<sup>116</sup> *See* March 3 Order, 150 FERC ¶ 61,163 at P 56 (citing 40 C.F.R. § 1502.9(c)(1) (2014)). Under section 1502.9(c)(1) of the CEQ's regulations, an agency is only required to prepare a supplemental EIS if (1) "the agency makes substantial changes in the proposed action that are relevant to environmental concerns" or (2) "there are significant new circumstances or information relevant to environmental concerns." *Id.*

meet self-imposed deadlines.<sup>117</sup> Instead, Town of Dedham argues, the Commission should have withheld the certificate until the Commission received all required mitigation plans, including those required by Condition 22 that requires Algonquin to file a Residential Construction Plan and Condition 26 that requires Algonquin to file a construction schedule for the West Roxbury Lateral that would be shared with each affected municipality. Town of Dedham argues that by requiring Algonquin to develop mitigation measures after issuing the certificate, the Commission placed municipalities in an inferior negotiating position.

89. Riverkeeper argues that the final EIS violated NEPA because the final EIS is based on incomplete information as evident by the final EIS's conditions that require: a site-specific crossing plan for the Catskill Aqueduct (Environmental Condition 15); a revised site-specific crossing plan incorporating additional avoidance or mitigation measures for two vernal pools in New York (Environmental Condition 18); and a site-specific plan for Harriman State Park, including additional avoidance and mitigation measures (Environmental Condition 20). Citing *Northern Plains Resource Council, Inc. v. Surface Transportation Board (Northern Plains)*,<sup>118</sup> Riverkeeper argues that by requiring these filings after issuing a certificate violates NEPA because baseline conditions, environmental impacts, and proposed mitigation measures must be included and evaluated in an EIS before project approval.

90. As our final EIS explains, we did not accelerate our environmental review.<sup>119</sup> Algonquin utilized the pre-filing process for eight months, instead of the minimum six months. The draft EIS comment period was consistent with other Commission draft

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<sup>117</sup> West Roxbury Intervenors similarly argue that the Commission rushed to issue the March 3 Order. In support, West Roxbury Intervenors point out that the Commission issued the March 3 Order one day after receiving EPA's comments. See West Roxbury Intervenors April 2, 2015 Rehearing Request at 29. As we note below, we did not accelerate our review. Moreover, the majority of the issues that the EPA raised in its final EIS comments were the same issues that the EPA raised in its draft EIS comments, which Commission staff addressed in the final EIS.

<sup>118</sup> 668 F.3d 1067, 1085 (9th Cir. 2011).

<sup>119</sup> See final EIS at Vol. II, SA-7.

EIS comment periods. Further, Commission staff issued a revised schedule for environmental review adding time to complete the final EIS.<sup>120</sup>

91. Environmental Conditions 22 and 26 also do not place the Town of Dedham or other municipalities at a disadvantage. While Condition 22 requires Algonquin to file revised residential construction plans based on any additional landowner input, the final EIS found Algonquin's original plans acceptable to minimize residential impact. As for Condition 26, it merely ensures communication about the timing of project construction; it does not require additional mitigation.

92. Further, our environmental conditions that require Algonquin to file mitigation plans do not violate NEPA. The purpose of NEPA is to ensure that an agency will carefully consider detailed information concerning significant environmental impacts in reaching its decisions. NEPA guarantees that relevant information will be made available to the larger audiences that may also play a role in both the decision making process and implementation of that decision. NEPA, however, "does not require a complete plan be actually formulated at the onset, but only that the proper procedures be followed for ensuring that the environmental consequences have been fairly evaluated."<sup>121</sup>

93. The required filings in the final EIS, and adopted in the March 3 Order, do not parallel the final EIS at issue in *Northern Plains* as Riverkeeper contends. In that case, the Surface Transportation Board issued a final EIS that gathered baseline data as part of mitigation measures to be completed after the NEPA process. Here, Commission staff published a final EIS that evaluated baseline data. Algonquin's filings will not present new environmentally-significant information nor pose substantial changes to the proposed action that would otherwise require a supplemental EIS.

94. Moreover, as we explain above and in other cases,<sup>122</sup> practicalities require the issuance of orders before completion of certain reports and studies because large projects such as this, take considerable time and effort to develop. Perhaps more important, their development is subject to many significant variables whose outcomes cannot be predetermined. Accordingly, consistent with longstanding practice, and as authorized by NGA section 7(e),<sup>123</sup> the Commission typically authorizes natural gas projects subject to

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<sup>120</sup> FERC December 10, 2014 Notice of Revised Schedule for Environmental Review of the Algonquin Incremental Market Project.

<sup>121</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989).

<sup>122</sup> See, e.g., *Weaver's Cove Energy, LLC*, 114 FERC ¶ 61,058, at PP 108-115 (2006); *Islander E. Pipeline Co.*, 102 FERC ¶ 61,054, at PP 41-44 (2003).

<sup>123</sup> *Supra* note 30.

conditions that must be satisfied by an applicant or others before the authorizations can be effectuated by constructing and operating the project.<sup>124</sup>

## 2. Programmatic EIS

95. As it has in other proceedings, on rehearing Allegheny contends that the Commission violated NEPA by failing to prepare a programmatic EIS for natural gas infrastructure projects in the Marcellus and Utica shale formations.<sup>125</sup>

96. CEQ's regulations do not require broad or "programmatic" NEPA reviews. CEQ has stated, however, that such a review may be appropriate where an agency: (1) is adopting official policy; (2) is adopting a formal plan; (3) is adopting an agency program; or (4) is proceeding with multiple projects that are temporally and spatially connected.<sup>126</sup> The Supreme Court has held that a NEPA review covering an entire region (that is, a programmatic review) is required only "if there has been a report or recommendation on a proposal for major federal action" with respect to the region,<sup>127</sup> and the courts have concluded that there is no requirement for a programmatic EIS where the agency cannot identify the projects that may be sited within a region because individual permit applications will be filed at a later time.<sup>128</sup>

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<sup>124</sup> See, e.g., *East Tennessee Natural Gas Co.*, 102 FERC ¶ 61,225, at P 23 (2003), *aff'd sub nom. Nat'l Comm. for the New River, Inc. v. FERC*, 373 F.3d 1323 (D.C. Cir. 2004).

<sup>125</sup> Allegheny April 1, 2015 Rehearing Request at 28-41.

<sup>126</sup> See CEQ, *Effective Use of Programmatic NEPA Reviews* at 13-15 (citing 40 C.F.R. § 1508.18(b)).

<sup>127</sup> *Kleppe*, 427 U.S. 390 (1976) (holding that a broad-based environmental document is not required regarding decisions by federal agencies to allow future private activity within a region).

<sup>128</sup> See *Piedmont Envtl. v. FERC*, 558 F.3d 304, 316-17 (4th Cir. 2009).

97. We have explained that there is no Commission plan, policy, or program for the development of natural gas infrastructure.<sup>129</sup> Rather, the Commission acts on individual applications filed by entities proposing to construct interstate natural gas pipelines. Under NGA section 7, the Commission is obligated to authorize a project if it finds that the construction and operation of the proposed facilities “is or will be required by the present or future public convenience and necessity.”<sup>130</sup> What is required by NEPA, and what the Commission provides, is a thorough examination of the potential impacts of specific projects. In the circumstances of the Commission’s actions, a broad, regional analysis would “be little more than a study . . . concerning estimates of potential development and attendant environmental consequences,”<sup>131</sup> which would not present “a credible forward look and would therefore not be a useful tool for basic program planning.”<sup>132</sup> As to projects that are closely related in time or geography, the Commission may, however, prepare a multi-project environmental document, where that is the most efficient way to review project proposals.<sup>133</sup>

98. Allegheny claims that the Commission is engaged with the natural gas industry in regional development and planning. In support, Allegheny refers to the Commission’s participation in the development of the National Petroleum Council’s 2007 Prudent Development report, which it contends stresses the need to increase natural gas infrastructure, as well as the Commission’s Strategic Plan, which it states identifies the approval of natural gas infrastructure projects as a specific goal. It also contends that the Commission’s proceedings related to natural gas and electricity market coordination demonstrates that the Commission is engaged in long-term regional natural gas development and planning.<sup>134</sup> Further, Allegheny implies that because the Department of

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<sup>129</sup> See, e.g., *Texas Eastern Transmission, LP*, 149 FERC ¶ 61,259, at PP 38-47 (2014); *Dominion Transmission, Inc.*, 152 FERC ¶ 61,138, at P 30 (2015).

<sup>130</sup> 15 U.S.C. § 717f(e) (2012).

<sup>131</sup> *Kleppe*, 427 U.S. at 402.

<sup>132</sup> *Piedmont Env'tl. Council*, 558 F.3d at 316.

<sup>133</sup> See, e.g., Environmental Assessment for the Monroe to Cornwell Project and the Utica Access Project, Docket Nos. CP15-7-000 & CP15-87-000 (filed Aug. 19, 2015); Final Multi-Project Environmental Impact Statement for Hydropower Licenses: Susquehanna River Hydroelectric Projects, Project Nos. 1888-030, 2355-018, and 405-106 (2015).

<sup>134</sup> Allegheny cites the following proceedings: Coordination Between Natural Gas and Electricity Markets, Docket No. AD12-12-000; *Coordination of the Scheduling Processes of Natural Gas Pipelines and Public Utilities* (Docket No. RM14-2); *California (continued ...)*

Energy is the Commission's parent department, the Commission is involved with the Department of Energy's initiative to "analyze the natural gas infrastructure serving a large portion" of the areas where Marcellus and Utica shale gas are being delivered.<sup>135</sup>

99. Allegheny adds that CEQ guidance and case law supports developing a programmatic EIS. Allegheny states CEQ's December 2014 guidance on programmatic NEPA reviews states that "[p]rogrammatic NEPA reviews may also support policy- and planning-level decisions when there are limitations in available information and uncertainty regarding the timing, location, and environmental impacts of subsequent implementing action(s)."<sup>136</sup> Thus, Allegheny argues that even if future pipeline projects may be theoretical, this does not mean that the Commission "would not be able to establish parameters for subsequent analysis."<sup>137</sup> Allegheny also contends that *Northern Plains* supports the need for a programmatic EIS because a programmatic EIS would provide the Commission information to conduct a cumulative impacts assessment of natural gas production activities.

100. Allegheny states CEQ's December 2014 guidance on programmatic NEPA reviews explicitly recommends a programmatic EIS when "several energy development programs proposed in the same region of the country. . . [have] similar proposed methods of implementation and similar best practice and mitigation measures that can be analyzed in the same document."<sup>138</sup> Allegheny cites *Kleppe v. Sierra Club (Kleppe)* to argue that, "when several proposals . . . that will have cumulative or synergistic environmental impact upon a region are pending concurrently before an agency, their environmental impacts must be considered together."<sup>139</sup>

101. Allegheny maintains that there is an enormous expansion of the natural gas pipeline system and much of it is due to gas drilling in the Marcellus and Utica shale formations.

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*Indep. Sys. Operator Corp.*, Order Initiating Investigation into ISO and RTO Scheduling Practices, 146 FERC ¶ 61,202 (2014), and *Posting of Offers to Purchase Capacity*, 146 FERC ¶ 61,203 (2014). See Allegheny April 1, 2015 Rehearing Request at 34.

<sup>135</sup> *Id.* at 37.

<sup>136</sup> Allegheny April 1, 2015 Rehearing Request at 29 (citing CEQ 2014 Programmatic EIS Guidance at 11).

<sup>137</sup> *Id.* at 29.

<sup>138</sup> *Id.* at 24 (citing 2014 CEQ Guidance).

<sup>139</sup> *Id.* at 25 (citing *Kleppe*, 427 U.S. 390, 410 (1976)).

Allegheny points to, among other things, an Energy Information Administration publication and various maps on new pipeline projects to move Marcellus or Utica shale production.<sup>140</sup> Allegheny states that these projects have similar proposed methods of implementation and similar best practice and mitigation measures, and therefore, should be considered together in a programmatic EIS.

102. Allegheny argues that the Commission's alleged program to support natural gas development meets the two-prong test that the courts have used to determine whether a programmatic EIS is appropriate: (1) the programmatic EIS would be sufficiently forward looking to contribute to the decisionmaker's basic planning of the overall program, and (2) the decisionmaker purports to 'segment' the overall program, thereby unreasonably constricting the scope of primordial environmental evaluation.<sup>141</sup> Allegheny argues that the Commission's alleged program satisfies the first prong because a programmatic EIS would assist the Commission and the public in understanding the broader reasonably foreseeable consequences of jurisdictional projects and non-jurisdictional gas drilling in the Marcellus and Utica shale formations. With respect to the second prong, Allegheny asserts that the Commission disingenuously described the pipelines as only an amalgamation of unrelated smaller projects to escape the existence of a comprehensive program.<sup>142</sup>

103. We disagree. Documents cited by Allegheny, including the Commission's Strategic Plan and the Commission's proceeding on coordinating natural gas and electricity markets, do not show that the Commission is engaged in regional planning. Rather, the Strategic Plan sets forth goals for the efficient processing of individual pipeline applications to carry out the Commission's responsibilities under the NGA. Similarly, the focus of the proceedings regarding the coordination of the natural gas and electric industries is to better coordinate the scheduling of wholesale natural gas and electricity markets as well as to provide additional scheduling flexibility to all shippers on interstate natural gas

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<sup>140</sup> Allegheny April 1, 2015 Rehearing Request at Attachments 6, 11.

<sup>141</sup> *Id.* at 32 (citing *Churchill Cnty. v. Norton*, 276 F.3d 1060, 1076 (9th Cir. 2001)).

<sup>142</sup> *Id.* at 32-33 (citing *Churchill Cnty. v. Norton*, 276 F.3d 1060, 1076 (9th Cir. 2001) (citing *Nat'l Wildlife Fed'n*, 677 F.2d 883, 890 (D.C. Cir. 1981))).



pipelines.<sup>143</sup> Further, while the Commission is established within the Department of Energy, the Commission is an independent regulatory agency and is not subject to any Department of Energy initiative regarding natural gas infrastructure.

104. The mere fact that there are a number of approved, proposed, or planned infrastructure projects to increase infrastructure capacity to transport natural gas from the Marcellus and Utica shale does not establish that the Commission is engaged in regional development or planning. Instead, this information confirms that pipeline projects to transport Marcellus and Utica shale gas are initiated solely by a number of different companies in private industry influenced by the market. As we have noted above, an agency is not required to prepare a programmatic EIS to evaluate the regional development of a resource by private industry if the development is not part of, or responsive to, that agency's federal plan or program in that region.<sup>144</sup> Thus, here, the Commission's environmental review of Algonquin's AIM Project in a discrete EIS is appropriate under NEPA.

105. Further, as among the various referenced proposed pipeline projects to provide additional transportation capacity within and from the northeastern United States, Allegheny has not shown any relationship in time or geography beyond the fact that they might share a general regional proximity to the Marcellus and Utica shale regions. Thus, a multi-project environmental document would not be the most efficient way to review the proposed projects.

106. In sum, there is no support for Allegheny's assertion that the AIM Project is part of a comprehensive federal program. Therefore, a programmatic EIS is neither required nor useful under the circumstances here.

### **3. Indirect Effects**

107. Allegheny, Coalition, and Mr. Harckham contend that the March 3 Order failed to

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<sup>143</sup> See, e.g., *Rockies Express Pipeline LLC*, 150 FERC ¶ 61,161, at P 55 (2015); (discussing *Coordination of Scheduling Processes of Interstate Gas Pipelines and Public Utilities*, 80 Fed. Reg. 23,198 (2015), FERC Stats. & Regs., ¶ 31,368 (2015)).

<sup>144</sup> *Kleppe*, 427 U.S. at 401-02 (“[The District Court] found no evidence that the individual coal development projects undertaken or proposed by private industry and public utilities in that part of the country are integrated into a plan or otherwise interrelated . . . . Absent an overall plan for regional development, it is impossible to predict the level of coal-related activity that will occur in the region identified by respondents, and thus impossible to analyze the environmental consequences and the resource commitments involved in, and the alternatives to, such activity.”)

adequately analyze the indirect effects of alleged induced natural gas production activities in the Marcellus and Utica shale plays and the associated environmental harms.

108. CEQ's regulations direct federal agencies to examine the direct, indirect, and cumulative impacts of proposed actions.<sup>145</sup> Indirect impacts are defined as those "which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems."<sup>146</sup> Accordingly, to determine whether an impact should be studied as an indirect impact, the Commission must determine whether it: (1) is caused by the proposed action; and (2) is reasonably foreseeable.

109. With respect to causation, "NEPA requires 'a reasonably close causal relationship' between the environmental effect and the alleged cause"<sup>147</sup> in order "to make an agency responsible for a particular effect under NEPA."<sup>148</sup> As the Supreme Court explained, "a 'but for' causal relationship is insufficient [to establish cause for purposes of NEPA]."<sup>149</sup> Thus, "[s]ome effects that are 'caused by' a change in the physical environment in the sense of 'but for' causation," will not fall within NEPA if the causal chain is too attenuated.<sup>150</sup> Further, the Court has stated that "where an agency has no ability to prevent a certain effect due to its limited statutory authority over the relevant actions, the agency cannot be considered a legally relevant 'cause' of the effect."<sup>151</sup>

110. An effect is "reasonably foreseeable" if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision."<sup>152</sup> NEPA

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<sup>145</sup> See 40 C.F.R. § 1508.25(c) (2015).

<sup>146</sup> See 40 C.F.R. § 1508.8(b) (2015).

<sup>147</sup> *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752 at 767 (2004) (quoting *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)).

<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> *Metro. Edison*, 460 U.S. at 774.

<sup>151</sup> *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752 at 770.

<sup>152</sup> *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992). See also *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005).

requires “reasonable forecasting,” but an agency is not required “to engage in speculative analysis” or “to do the impractical, if not enough information is available to permit meaningful consideration.”<sup>153</sup>

111. The Commission does not have jurisdiction over natural gas production. The potential impacts of natural gas production, with the exception of greenhouse gases and climate change, would be on a local and regional level. Each locale includes unique conditions and environmental resources. Production activities are thus regulated at a state and local level. In addition, the Environmental Protection Agency regulates deep underground injection and disposal of wastewaters and liquids under the Safe Drinking Water Act, as well as air emissions under the Clean Air Act. On public lands, federal agencies are responsible for enforcing regulations that apply to natural gas wells.

112. As we have previously concluded in natural gas infrastructure proceedings, the environmental effects resulting from natural gas production are generally neither caused by a proposed pipeline (or other natural gas infrastructure) project nor are they reasonably foreseeable consequences of our approval of an infrastructure project, as contemplated by CEQ regulations.<sup>154</sup> A causal relationship sufficient to warrant Commission analysis of the non-pipeline activity as an indirect impact would only exist if the proposed pipeline would transport new production from a specified production area and that production would not occur in the absence of the proposed pipeline (i.e., there will be no other way to move the gas).<sup>155</sup> To date, the Commission has not been presented with a proposed pipeline project that the record shows will cause the predictable development of gas reserves. In fact, the opposite causal relationship is more likely, i.e., once production begins in an area, shippers or end users will support the development of a pipeline to move

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<sup>153</sup> *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1078 (9th Cir. 2011).

<sup>154</sup> See, e.g., *Central New York Oil and Gas Co., LLC*, 137 FERC ¶ 61,121, at PP 81-101 (2011), *order on reh'g*, 138 FERC ¶ 61,104, at PP 33-49 (2012), *petition for review dismissed sub nom. Coal. for Responsible Growth v. FERC*, 485 Fed. Appx. 472, 474-75 (2d Cir. 2012) (unpublished opinion).

<sup>155</sup> Cf. *Sylvester v. U.S. Army Corps of Engin'rs*, 884 F.2d 394, 400 (9th Cir. 1989) (upholding the environmental review of a golf course that excluded the impacts of an adjoining resort complex project). See also *Morongo Band of Mission Indians v. F.A.A.*, 161 F.3d 569, 580 (9th Cir. 1998) (concluding that increased air traffic resulting from airport plan was not an indirect, “growth-inducing” impact); *City of Carmel-by-the-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1162 (9th Cir. 1997) (acknowledging that existing development led to planned freeway, rather than the reverse, notwithstanding the project’s potential to induce additional development).

the produced gas. It would make little economic sense to undertake construction of a pipeline in the hope that production might later be determined to be economically feasible and that the producers will choose the previously-constructed pipeline as best suited for moving their gas to market.

113. Even accepting, *arguendo*, that a specific pipeline project will cause natural gas production, we have found that the potential environmental impacts resulting from such production are not reasonably foreseeable. As we have explained, the Commission generally does not have sufficient information to determine the origin of the gas that will be transported on a pipeline. It is the states, rather than the Commission, that have jurisdiction over the production of natural gas and thus would be most likely to have the information necessary to reasonably foresee future production. We are aware of no forecasts by such entities, making it impossible for the Commission to meaningfully predict production-related impacts, many of which are highly localized. Thus, even if the Commission knows the general source area of gas likely to be transported on a given pipeline, a meaningful analysis of production impacts would require more detailed information regarding the number, location, and timing of wells, roads, gathering lines, and other appurtenant facilities, as well as details about production methods, which can vary per producer and depend on the applicable regulations in the various states. Accordingly, the impacts of natural gas production are not reasonably foreseeable because they are “so nebulous” that we “cannot forecast [their] likely effects” in the context of an environmental analysis of the impacts related to a proposed interstate natural gas pipeline.<sup>156</sup>

114. Nonetheless, we note that, although not required by NEPA, a number of federal agencies have examined the potential environmental issues associated with unconventional natural gas production in order to provide the public with a more complete understanding of the potential impacts. The Department of Energy has concluded that such production, when conforming to regulatory requirements, implementing best management practices, and administering pollution prevention concepts may have temporary minor impacts to water resources.<sup>157</sup> The EPA has reached a similar conclusion.<sup>158</sup> With respect to air

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<sup>156</sup> *Habitat Educ. Ctr.*, 609 F.3d 897, 902 (7th Cir. 2010) (finding that impacts that cannot be described with sufficient specificity to make their consideration meaningful need not be included in the environmental analysis).

<sup>157</sup> See U.S. Department of Energy, *Addendum to Environmental Review Documents Concerning Exports of Natural Gas From The United States* (August 2014) at 19, <http://energy.gov/sites/prod/files/2014/08/f18/Addendum.pdf> (“DOE Addendum”).

quality, the Department of Energy found that natural gas development leads to both short- and long-term increases in local and regional air emissions.<sup>159</sup> It also found that such emissions may contribute to climate change. But to the extent that natural gas production replaces the use of other carbon-based energy sources, the Department of Energy found there may be a net positive impact in terms of climate change.<sup>160</sup>

115. Below, we discuss rehearing applicants' challenges to our causation and reasonable foreseeability findings.

**a. Lack of Causality**

116. Allegheny and Coalition argue that additional, future production is causally related to the AIM Project. Allegheny asserts that induced natural gas production and the AIM Project are "two links of a single chain" as allegedly shown by a Commission staff presentation and Algonquin's application.<sup>161</sup> Allegheny states that a presentation by the Commission's Office of Energy Projects titled, "Natural Gas in the U.S.," demonstrates that shale gas extraction and natural gas infrastructure are causally related. In Algonquin's application, Allegheny cites to Algonquin's statements that the AIM Project will provide access to growing supply areas, which Allegheny assumes to mean Marcellus and Utica shale plays in the Appalachian Basin. Coalition also points to publications by Algonquin's parent company, Spectra, that marketed the open season for the AIM Project by promoting its potential to transport shale gas to New England markets.

117. Further, Allegheny challenges the Commission's argument that gas drilling and the project are not casually related because natural gas development will continue with or without the project; Allegheny states that such argument is similar to the one rejected by the Eighth Circuit in *Mid States Coalition for Progress (Mid States)*.<sup>162</sup> Overall,

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<sup>158</sup> See U.S. Environmental Protection Agency, *Draft Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources*, at ES-6, [http://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651#\\_ga=1.161236345.552502682.1445635975](http://cfpub.epa.gov/ncea/hfstudy/recordisplay.cfm?deid=244651#_ga=1.161236345.552502682.1445635975). See also Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands, 80 Fed. Reg. 16128, (2015) (BLM promulgates regulations for hydraulic fracturing on Federal and Indian lands to "provide significant benefits to all Americans by avoiding potential damages to water quality, the environment, and public health").

<sup>159</sup> DOE Addendum at 32.

<sup>160</sup> *Id.* at 44.

<sup>161</sup> Allegheny April 1, 2015 Rehearing Request at 2, 12-14.

<sup>162</sup> *Id.* at 11 (citing *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d (continued ...))

Allegheny claims that Commission staff conducted its environmental analysis using “tunnel vision” similar to the Corps’ environmental analysis rejected by a district court in *Colorado River Indian Tribes v. Marsh (Colorado River)*.<sup>163</sup> Mr. Harckham argues that even if other pipelines may transport the capacity, which he states the final EIS fails to support, that does not alter the fact that the AIM Project has the potential to induce additional natural gas production and infrastructure development.

118. The record in this proceeding, including Algonquin’s application, Spectra’s marketing materials, and the presentation cited by Allegheny, does not demonstrate the requisite reasonably close causal relationship between the impacts of future natural gas production and the AIM Project that would necessitate further analysis. The fact that natural gas production and transportation facilities are all components of the general supply chain required to bring domestic natural gas to market is not in dispute. This does not mean, however, that the Commission’s approval of this particular pipeline project will cause or induce the effect of additional or further shale gas production.<sup>164</sup>

119. As we have explained in other proceedings, a number of factors, such as domestic natural gas prices and production costs, drive new drilling.<sup>165</sup> If the AIM Project was not

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520, 549 (8th Cir. 2003) (*Mid States*)).

<sup>163</sup> *Colorado River Indian Tribes v. Marsh*, 605 F. Supp. 1425 (C.D. Cal. 1985) (*Colorado River*).

<sup>164</sup> We note that our finding that we need not consider the environmental impacts of Marcellus shale region production when authorizing projects that may (or may not) make use of such supplies has been upheld in court. *See Coal. for Responsible Growth v. FERC*, 485 Fed. Appx. 472 (2d Cir. 2012) (“FERC’s analysis of the development of the Marcellus Shale natural gas reserves was sufficient. FERC included a short discussion of Marcellus Shale development in the EA, and FERC reasonably concluded that the impacts of that development are not sufficiently causally-related to the project to warrant a more in-depth analysis”) (unpublished opinion).

<sup>165</sup> *See Rockies Express Pipeline LLC*, 150 FERC ¶ 61,161, at P 39 (2015) (*Rockies Express*). *See also Sierra Club v. Clinton*, 746 F. Supp. 2d 1025, 1045 (D. Min. 2010) (holding that the U.S. Department of State, in its environmental analysis for an oil pipeline permit, properly decided not to assess the transboundary impacts associated with oil production because, among other things, oil production is driven by oil prices, concerns surrounding the global supply of oil, market potential, and cost of production); *Fla. Wildlife Fed’n v. Goldschmidt*, 506 F. Supp. 350, 375 (S.D. Fla. 1981) (ruling that an agency properly considered indirect impacts when market demand, not a highway, would induce development).

constructed, it is reasonable to assume that any new production spurred by such factors would reach intended markets through alternate pipelines or other modes of transportation.<sup>166</sup> Again, any such production would take place pursuant to the regulatory authority of state and local governments.<sup>167</sup>

120. Further, future shale production is not an essential predicate for the AIM Project, which can receive natural gas through interconnections with other pipelines. The Algonquin pipeline system interconnects with the Texas Eastern Transmission pipeline system which spans an area from Texas to Illinois to Pennsylvania, crossing multiple other transmission systems and both shale and conventional gas plays, and with Maritimes' pipeline system, which transports onshore and LNG-source natural gas from Atlantic Canada to North American markets.

121. Allegheny asserts that the court's ruling in *Mid States* supports the contention that the Commission must analyze the effects of upstream gas drilling in the Marcellus and Utica shale formations. But *Mid States* involved the Surface Transportation Board's failure to analyze the downstream effects of a proposal to build and upgrade rail systems to reach coal mines in Wyoming's Powder River Basin.<sup>168</sup> The court found – and the project proponent did not dispute – that the proposed project would increase the use of coal for power generation. The court held that where such downstream effects are reasonably foreseeable, they must be analyzed, even if the extent of those effects is uncertain. Here, unlike *Mid States*, Allegheny asserts that construction of the AIM Project would increase production, rather than end use. And unlike *Mid States*, there is an insufficient causal link between our authorization of the project and any additional production. As we have explained, natural gas development will likely continue with or without the AIM Project. Thus, it is not merely the extent of production-related impacts that we find speculative, as

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<sup>166</sup> See *Rockies Express*, 150 FERC ¶ 61,161 at 39.

<sup>167</sup> As reflected on a map in an attachment to Allegheny's request for rehearing, there are more than 217,000 miles of existing interstate gas transmission pipeline in the United States, and the Marcellus shale area is one of the regions with the greatest concentrations of interstate pipelines facilities. See Allegheny April 1, 2015 Rehearing Request at Attachment 2 "Natural Gas in the U.S.: Supply and Infrastructure = Security" at page 3 (slide presentation by Michael McGhee, Director of the Commission's Division of Pipeline Certificates, at October 2010 8th EU-US Energy Regulators Roundtable). Further, in some instances, producers proceed with the development of new wells that produce both oil and gas based on oil prices, and the associated gas production is flared because it is uneconomical to construct gathering lines to transport the gas to the pipeline grid.

<sup>168</sup> *Mid States* 345 F.3d at 550.

was the case in *Mid States*, but also whether the project at issue will have any such impacts.

122. Similarly, we find *Colorado River* distinguishable. In *Colorado River*, a district court held that the Corps violated NEPA by not preparing a final EIS for a permit authorizing a developer to place riprap along a riverbank. The court stated that without the permit, the developer could not have received local government approval for its proposed residential and commercial development project along the riverbank.<sup>169</sup> The Corps originally prepared a draft EIS because proposed development along the banks would cause significant environmental impacts.<sup>170</sup> Before completing its final EIS, however, the Corps retracted its draft EIS because it determined that the appropriate scope of its environmental analysis should be limited to the activities within its jurisdiction, i.e., the river and the bank.<sup>171</sup>

123. The court disagreed, finding that the Corps violated NEPA because it narrowed the scope of its analysis to primary or direct impacts of its authorization, ignoring the indirect and cumulative effects analysis required by NEPA. Here, Commission staff analyzed the indirect and cumulative effects of the project. Commission staff did not analyze the effects of induced natural gas production because, unlike in *Colorado River*, there is no sufficient causal link between our authorization and any additional production. Natural gas development will likely continue with or without the AIM Project.

**b. Lack of Reasonable Foreseeability**

124. Allegheny and Mr. Harckham argue that induced production is a reasonably foreseeable effect of the AIM Project. Allegheny argues if gas production was not reasonably foreseeable, Algonquin would not be constructing the project. Allegheny contends that the March 3 Order misinterpreted NEPA case law when it found that natural gas production activities were not reasonably foreseeable because Commission staff could only speculate on the exact location, scale, scope, and timing of production. Allegheny and Mr. Harckham assert that speculation is implicit in NEPA. In support, Allegheny cites *Northern Plains*<sup>172</sup> to argue that there is no need for Commission staff to know the exact location of production activities.

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<sup>169</sup> 605 F. Supp. 1425, 1428.

<sup>170</sup> *Id.*

<sup>171</sup> *Id.*

<sup>172</sup> 668 F.3d 1067 (9th Cir. 2013).



125. *Northern Plains* addresses the issue of whether the Surface Transportation Board should have considered the cumulative impacts of coal bed methane well development as part of its NEPA analysis of a proposed 89-mile-long rail line intended to serve specific new coal mines in three Montana counties. *Northern Plains* is distinguishable because, as part of an earlier, programmatic EIS, the BLM had already analyzed reasonably foreseeable coal bed methane well development, which provided the Surface Transportation Board with information about the timing, scope, and location of future coal bed methane well development. Here, the Commission has no similar information in the present case about the timing, location, and scope of future shale (or conventional) well development that might be associated with the proposed AIM Project. As the Commission stated in the March 3 Order, *Northern Plains* establishes that while agencies must engage in reasonable forecasting in considering cumulative impacts, NEPA does not require an agency to “engage in speculative analysis.”<sup>173</sup>

126. Further, *Northern Plains* concerned the foreseeability of impacts from coal bed methane extracted from specific new coal mines in three Montana counties, which the proposed rail line intended to service. Here, Allegheny asks us to consider the impacts from all potential gas production activities in a multistate region, which may or may not produce gas to be transported using the capacity created by the AIM Project. As stated in *Northern Plains*, agencies are not required “to do the impractical, if not enough information is available to permit meaningful consideration.”<sup>174</sup> A broad analysis, based on generalized assumptions rather than reasonably specific information of this type, will not meaningfully assist the Commission in its decision making, e.g., evaluating potential alternatives.

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<sup>173</sup> *Id.* at 1078.

<sup>174</sup> *Id.* (citing *Env'tl. Protection Info. Ctr. v. U.S. Forest Serv.*, 451 F.3d 1005, 1014 (9th Cir. 2006)).

#### **4. Cumulative Effects**

127. CEQ defines “cumulative impact” as “the impact on the environment which results from the incremental impact of the action [being studied] when added to other past, present, and reasonably foreseeable future actions . . . .”<sup>175</sup> The requirement that an impact must be “reasonably foreseeable” to be considered in a NEPA analysis applies to both indirect and cumulative impacts.

128. The “determination of the extent and effect of [cumulative impacts], and particularly identification of the geographic area within which they may occur, is a task assigned to the special competency of the appropriate agencies.”<sup>176</sup> CEQ has explained that “it is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.”<sup>177</sup> Further, a cumulative impact analysis need only include “such information as appears to be reasonably necessary under the circumstances for evaluation of the project rather than to be so all-encompassing in scope that the task of preparing it would become either fruitless or well-nigh impossible.”<sup>178</sup> An agency’s analysis should be proportional to the magnitude of the environmental impacts of a proposed action; actions that will have no significant direct and indirect impacts usually require only a limited cumulative impacts analysis.

##### **a. Cumulative Effects of Induced Production**

129. As we have explained, consistent with CEQ guidance, in order to determine the scope of a cumulative impacts analysis for each project, Commission staff establishes a geographic scope within which various resources may be affected by both a proposed project and other past, present, and reasonably foreseeable future actions.<sup>179</sup> While the scope of our cumulative impacts analysis will vary from case to case, depending on the facts presented, we have concluded that, where the Commission lacks meaningful

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<sup>175</sup> 40 C.F.R. § 1508.7 (2015).

<sup>176</sup> *Kleppe*, 427 U.S. 390 at 413.

<sup>177</sup> CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* at 8 (January 1997) (1997 CEQ Guidance), [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf).

<sup>178</sup> *Nat. Res. Def. Council, Inc. v. Callaway*, 524 F.2d 79, 88 (2d Cir. 1975).

<sup>179</sup> See, e.g., *Columbia Gas Transmission, LLC*, 149 FERC ¶ 61,255, at P 113 (2014).

information regarding potential future natural gas production within a geographic scope, production-related impacts are not sufficiently reasonably foreseeable so as to be included in a cumulative impacts analysis.<sup>180</sup>

130. Here, Commission staff established a geographic scope for the inclusion of other projects or activities based on the resources affected. To the extent production occurs outside of the AIM Project's geographic scope for cumulative impacts, the final EIS and the March 3 Order concluded that the potential environmental effects associated with shale production were not sufficiently reasonably foreseeable to warrant a detailed analysis for cumulative impacts.<sup>181</sup>

131. Allegheny, Coalition, and Mr. Harckham contend that the Commission unjustifiably restricts the cumulative impacts analysis. Citing various Commission natural gas proceedings, Allegheny states that such restriction is routine for the Commission and demonstrates that the Commission ignores the majority of the AIM Project impacts.<sup>182</sup>

132. Allegheny asserts that the Commission misread the 1997 CEQ Guidance to limit the scope of the cumulative impact analysis to an arbitrarily narrow geographic scope.<sup>183</sup> Allegheny notes that the 1997 CEQ Guidance contrasts between a project-specific analysis, for which it is often appropriate to analyze effects within the immediate area of the proposed action, and an analysis of the proposed action's contribution to cumulative effects, for which "the geographic boundaries of the analysis almost always should be expanded."<sup>184</sup> Similarly, Coalition and Mr. Harckham assert that the EPA stated geographic proximity is not the standard for NEPA's requirement to consider impacts that have a reasonably close relationship to the federal action.

133. To bolster their argument that the Commission should have considered as

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<sup>180</sup> *Id.* P 120.

<sup>181</sup> March 3 Order, 150 FERC ¶ 61,163, at PP 116, 123. We note that production would occur well over 10 miles from the AIM Project construction area, outside of the sub-watersheds crossed by the AIM Project facilities, and outside of the Air Quality Control Regions for the AIM Project compressor stations. *See* final EIS at 4-290.

<sup>182</sup> Allegheny April 1, 2015 Rehearing Request at 15-16.

<sup>183</sup> *Id.* at 15.

<sup>184</sup> *Id.* (citing 1997 CEQ Guidance at 12).

cumulative effects the impacts of Marcellus and Utica shale production activities, rehearing applicants cite various cases. Allegheny and Coalition cite *LaFlamme v. FERC* (*LaFlamme*) to argue that the Commission cannot consider the cumulative impacts of the AIM Project in isolation.<sup>185</sup> Allegheny cites *Natural Resources Defense Council, Inc. v. Hodel* (*Hodel*)<sup>186</sup> to argue that the Commission must consider ‘inter-regional’ impacts of Marcellus and Utica shale development activities. Allegheny also cites *Northern Plains* to argue that projects need not be finalized before they are reasonably foreseeable and that even if the Commission does not know the extent of natural gas production activities, the Commission is aware of its nature and cannot arbitrarily narrow its cumulative impacts analysis. In addition to case law, Allegheny references various recent research that identifies the “substantial impact” that shale gas drilling will have throughout the Marcellus and Utica shale formations, obligating the Commission under NEPA to take a hard look at these impacts on a broader scale.<sup>187</sup>

134. In considering cumulative impacts, CEQ advises that an agency first identify the significant cumulative effects issues associated with the proposed action.<sup>188</sup> The agency should then establish the geographic scope for analysis.<sup>189</sup> Next, the agency should establish the time frame for analysis, equal to the timespan of a proposed project’s direct and indirect impacts.<sup>190</sup> Finally, the agency should identify other actions that potentially affect the same resources, ecosystems, and human communities that are affected by the proposed action.<sup>191</sup> As noted above, CEQ advises that an agency should relate the scope of its analysis to the magnitude of the environmental impacts of the proposed action.<sup>192</sup>

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<sup>185</sup> *LaFlamme v. FERC*, 852 F.2d 389 (9th Cir. 1988).

<sup>186</sup> *Nat. Res. Def. Council, Inc. v. Hodel* 865 F.2d 288 (D.C. Cir. 1998) (*Hodel*).

<sup>187</sup> Allegheny April 1, 2015 Rehearing Request at 24-26.

<sup>188</sup> 1997 CEQ Guidance at 11.

<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> See CEQ, *Memorandum on Guidance on Consideration of Past Actions in Cumulative Effects Analysis* at 2-3 (June 24, 2005) (2005 CEQ Guidance), [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf). The 2005 CEQ Guidance notes that agencies have substantial discretion in determining the appropriate level of their cumulative impact assessments and (*continued ...*)

135. The cumulative effects analysis in the EA took precisely the approach the CEQ guidance advises.<sup>193</sup> Because impacts on geology and soils, land use, residential areas, visual resources, cultural resources, and traffic by the AIM Project will be highly localized, the final EIS evaluated other projects within 0.25 mile of the construction work areas.<sup>194</sup> Similarly, impacts on waterbody and wetland crossings as well as on groundwater, vegetation, and wildlife by the AIM Project will occur in close proximity to the project. Therefore, the final EIS evaluated other projects within the sub-watersheds crossed by the AIM Project.<sup>195</sup> Likewise, long-term noise impacts from the AIM Project compressor stations will only occur within one mile of each station. Thus, the final EIS evaluated other projects that will result in long-term impacts on noise affecting the same noise-sensitive areas as the AIM Project compressor stations.<sup>196</sup>

136. With respect to operational air quality impacts, the final EIS acknowledged that the AIM Project compressor stations will result in long-term impacts on air quality in various Air Quality Control Regions. Therefore, the final EIS also considered other projects with the potential to result in long-term impacts on air quality (e.g. natural gas compressor stations or industrial facilities) within the Air Quality Control Regions that will also be impacted by an AIM Project compressor station.<sup>197</sup>

137. For these reasons, we find that the final EIS identified the appropriate geographic scope for considering cumulative effects, and properly excluded from its cumulative impacts analysis the impacts from shale gas drilling in the Marcellus and Utica shale formations. Such impacts will occur far outside the AIM Project's geographic scope.<sup>198</sup>

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that agencies should relate the scope of their analyses to the magnitude of the environmental impacts of the proposed action. Further, the Supreme Court held that determination of the extent and effect of cumulative impacts, “and particularly identification of the geographic area within which they occur, is a task assigned to the special competency of the agenc[y],” and is overturned only if arbitrary and capricious. *See Kleppe*, 427 U.S. 390, 414-15 (1976).

<sup>193</sup> We note that the 1997 CEQ Guidance at 15 states that the “applicable geographic scope needs to be defined case-by-case.”

<sup>194</sup> *See* final EIS at 4-293.

<sup>195</sup> *See id.*

<sup>196</sup> *See id.*

<sup>197</sup> *See id.*

<sup>198</sup> *See id.* at 4-290.

Further, given the large geographic scope of the Marcellus and Utica shale, the magnitude of the impacts of gas drilling in the Marcellus and Utica shale formations bears no relationship to the limited magnitude of Algonquin's instant proposal, which involves temporary construction impacts on 575.6 acres and permanent impacts to 42.4 acres of land within a mixed use area of mostly forest and open land.

138. In our view, Allegheny's arguments regarding the geographic scope of our cumulative impacts analysis are based on its erroneous claim that the Commission must conduct a regional programmatic NEPA review of natural gas development and production in the Marcellus and Utica shale formations, an area that covers potentially thousands of square miles. We decline to do so. As the Commission explained in other proceedings,<sup>199</sup> there is no Commission program or policy to promote additional natural gas development and production in shale formations.

139. We also disagree with Allegheny's argument that the Commission's use of a project geographic scope is inconsistent with CEQ regulations. Our cumulative impacts analyses consider the additive impact of a proposed action's direct and indirect effects with other past, present, or reasonably foreseeable actions that have impacts occurring in the same region, and within the same time span, as the impacts of the proposed action.<sup>200</sup> We believe this is consistent with the CEQ's Guidance.

140. Allegheny's and Coalition's reliance on *LaFlamme* is misplaced, as that case in fact supports the Commission's use of a geographic scope and an analysis of cumulative impacts limited to those impacts occurring in the area of the project at issue. In *LaFlamme*, the court found that in preparing an EA for the Sayles Flat Project, a hydroelectric project on the American River in California, the Commission failed to consider the cumulative impacts of other projects on the American River because it had relied on a previous EIS for another project on the river, which had limited its review to assessing the impact of that project's diversion dams and other proposed facilities in that project's area. Thus, the court criticized the Commission's use of the "narrow analysis" of

another project's EIS as a substitute for the analysis required for the Sayles project.<sup>201</sup> The

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<sup>199</sup> See, e.g., *Columbia Gas Transmission, LLC*, 153 FERC ¶ 61,064 at P 44; *Dominion Transmission, Inc.*, 152 FERC ¶ 61,138, at P 32 (2015).

<sup>200</sup> See final EIS at 4-282 to 4-304.

<sup>201</sup> *LaFlamme*, 852 F.2d 389 at 399, 401-02 ("At no point did the [[Upper Mountain Project] EIS analyze the effects other projects, pending or otherwise, might have on this section of the American River Basin.")

court in *LaFlamme* did not fault the Commission for limiting its cumulative impacts analysis for the Sayles Flat Project to the cumulative effects of dams and facilities in the area of the project. If anything, *LaFlamme* supports identifying a geographic scope appropriately connected to the location of the project under review.

141. Similarly, Allegheny's reliance on *Hodel* is unavailing. In *Hodel* the court considered the U.S. Department of the Interior's (Interior) EIS composed in conjunction with its plan to award five-year leases for hydrocarbon exploration and production on multiple offshore blocks. The court found that the EIS focused primarily on assessing impacts associated with the region proximate to each lease block, and thereby failed to capture potential inter-regional cumulative impacts on migratory species if exploration and production were to take place simultaneously on several lease blocks within the species' migratory range. *Hodel* considered a plan for resource-development leasing over a vast geographic area (including the North Atlantic, North Aleutian Basin, Straits of Florida, Eastern Gulf of Mexico, and waters off California, Oregon, and Washington). In contrast, the 'plan' before us involves construction of approximately 37 miles of pipeline and related facilities in New York, Connecticut, and Massachusetts, and the addition of a compression at six existing compressor stations. Because we find the proposal will have no reasonably foreseeable impacts on shale development, we find no reason to adopt a geographic scope for reviewing cumulative impacts that would include, as Allegheny urges, all the "the Marcellus and Utica shale gas extraction."<sup>202</sup>

142. Interior's leasing of large tracts in federal waters in *Hodel* is also dissimilar from the Commission's case-by-case review of individual and independent infrastructure projects. Whereas mineral leases, especially those that cover extensive and contiguous areas, establish the location and time frame for future development, the Commission does not permit, and indeed has no jurisdiction over, activities upstream of the point of interconnection with an interstate pipeline, e.g., leasing, exploration, production, processing, and gathering. To the extent the court in *Hodel* was persuaded by an earlier Supreme Court statement that under NEPA ". . . proposals for . . . related actions that will have cumulative or synergistic environmental impact upon a region *concurrently pending before an agency* must be considered together,"<sup>203</sup> production and gathering activities in the Marcellus and Utica shale areas are not related actions concurrently pending before the Commission. Thus, there is no way to relate any specific production and gathering activities to this project.

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<sup>202</sup> Allegheny April 1, 2015 Rehearing Request at 24.

<sup>203</sup> *Hodel*, 865 F.2d at 297 (citing *Kleppe*, 427 U.S. at 410) (emphasis added).

**b. Other Cumulative Effects**

143. Rehearing applicants claim that the final EIS did not adequately analyze the cumulative effects of the AIM Project when added to the Atlantic Bridge Project; the Access Northeast Project; the Champlain Hudson Power Express Project – a proposed 330-mile 1,000 MW subterranean transmission line from Quebec, Canada, to Astoria, New York; and the West Point Transmission Project – a 1,000-megawatt underwater power cable proposed by West Point Partners to bring untapped power from northern and western New York State to the New York City area. Further, Mr. Harckham states that the final EIS inappropriately found that the cumulative effects of the AIM Project when added to the Atlantic Bridge Project would be mitigated based on conditions imposed by state permitting authorities.

144. We disagree and affirm the final EIS’s cumulative effects analysis. The final EIS considered the cumulative effects of the Atlantic Bridge Project using the preliminary details available at the time, provided by Algonquin.<sup>204</sup> The final EIS found that if the Atlantic Bridge Project moved forward based on the preliminary details, it would impact resources in many of the same areas as the AIM Project and the levels of impact would be similar to those of the AIM Project. The final EIS explained, however, that these impacts would not occur at the same time. The AIM Project would be constructed in 2015 and 2016, and the areas disturbed by the AIM Project would be restored before construction would start on the Atlantic Bridge Project, which at its earliest would be in 2017. As stated above, however, since the issuance of the final EIS, Algonquin has reduced the size, and thus minimized the impacts, of the Atlantic Bridge Project. Therefore, the final EIS’s cumulative effects analysis of the Atlantic Bridge Project is cautiously inclusive as many impacts would no longer occur.

145. The final EIS also properly considered the cumulative impacts of the Access Northeast Project. As required by CEQ regulations,<sup>205</sup> the final EIS explained that project details regarding the Access Northeast Project were unknown. The only information available on the Access Northeast Project was the preliminary information on Spectra’s website, which merely indicated that the project would be located in the New England region.<sup>206</sup> Without more detail on project facilities or locations, Commission staff could

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<sup>204</sup> See final EIS at 5-18.

<sup>205</sup> 40 C.F.R. § 1502.22 (2015) (“When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.”).

<sup>206</sup> See final EIS at 4-290.



not determine whether the Access Northeast Project would result in cumulative impacts within the same project area or geographic scope as the AIM Project.<sup>207</sup> In any event, Algonquin's pre-filing request for the Access Northeast Project indicates that the construction of the AIM Project and the Access Northeast Project will not overlap in time. Algonquin intends to begin constructing the Access Northeast Project in March 2018<sup>208</sup> whereas it plans to complete construction of the AIM Project in 2016. Should Algonquin file an application for the Access Northeast Project, Commission staff will then evaluate the cumulative impacts of the project when added to the existing environment, including impacts from the AIM Project.

146. We also find that the final EIS adequately analyzed the added effects of the Champlain Hudson Power Express Project. The final EIS identified potential overlap in construction timing of the Champlain Hudson Power Express Project and the AIM Project, which could result in increased traffic and noise impacts. The final EIS also noted that there would be no cumulative impact on the Hudson River, as Algonquin would utilize the HDD method for crossing the Hudson River to avoid in-water work.<sup>209</sup> Further, the Champlain Hudson Power Express and AIM Projects have been designed to utilize existing rights-of-way to the extent practical in the area near the Hudson River to avoid additional impacts. The final EIS acknowledged that while cumulative impacts would result, the AIM Project impacts would be temporary.

147. Lastly, the final EIS adequately analyzed the cumulative effects of the AIM Project when added to the West Point Transmission Project. The final EIS stated that West Point Partners modified the alignment of the transmission line to closely parallel the AIM Project to reduce impacts on residential areas and shorten construction timing.<sup>210</sup> The final EIS also evaluated the safety concerns of electrical arcing between the West Point Transmission Project and the AIM Project, concluding that safety issues would not occur.<sup>211</sup> The cumulative impacts assessed, however, will likely not transpire. The West Point Transmission Project application with the New York Public Service Commission has been suspended until West Point Partners files an application amendment that identifies

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<sup>207</sup> See *id.* at 4-283 (defining the geographic region considered for each resource where cumulative impacts could occur).

<sup>208</sup> Algonquin's November 3, 2015 Request for Approval to Use the Pre-Filing Process for the Access Northeast Project at Attachment 5, page 12.

<sup>209</sup> See final EIS at 4-150.

<sup>210</sup> See *id.* at 4-152.

<sup>211</sup> See *id.* at 4-276.

alternative sites for the southern converter station. Therefore, it is speculative to assume when or if the West Point Transmission Project will proceed.

## **5. Water Quality and Wetlands**

### **a. Stormwater Runoff**

148. Riverkeeper argues that the final EIS failed to meaningfully evaluate the impacts from increased stormwater runoff likely to be caused by the AIM Project, particularly within the watersheds that supply water to New York City, i.e. Croton, Catskill, and Delaware supply systems. Riverkeeper recommends that the final EIS contain a detailed stormwater pollution prevention plan (stormwater plan).

149. We disagree. The EIS evaluates all potential project impacts on resources, including from runoff associated with the project during storm events and trench and hydrostatic test dewatering. The EIS also identifies measures to reduce runoff-related impacts.<sup>212</sup> Several measures are in our *Upland Erosion Control, Revegetation, and Maintenance Plan (Plan)* and *Wetland and Waterbody Construction and Mitigation Procedures (Procedures)*, which Algonquin incorporated into its Erosion and Sediment Control Plan, including temporary and permanent erosion and sediment control measures along the right-of-way and project work areas, and the inspection and maintenance of the erosion control measures daily, weekly, and within 24 hours of each 0.5 inch rainfall event.<sup>213</sup> Based on these and other measures identified within Algonquin's Erosion and Sediment Control Plan, Commission staff determined that the impacts associated with runoff (regardless of source) could be adequately mitigated.

150. Furthermore, impacts will be reduced by implementing additional site-specific measures stipulated in state water quality permits and stormwater plans developed in consultation with the applicable state agencies. As discussed in the final EIS,<sup>214</sup> Algonquin filed a stormwater plan with the New York State Department of Environmental Conservation (New York DEC) in December 2014 and has been working with the New York City Department of Environmental Protection (NYCDEP) to ensure that the stormwater plan addresses NYCDEP's requirements for constructing within a New York City watershed. The New York DEC filed comments stating that with implementation of Algonquin's protection measures, the construction and operation of the AIM Project will

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<sup>212</sup> See final EIS at 4-22 to 4-25.

<sup>213</sup> See FERC, *Upland Erosion Control, Revegetation, and Maintenance Plan*, at 6 (2013), <http://www.ferc.gov/industries/gas/enviro/guidelines/upland-pocket-guide.pdf>.

<sup>214</sup> See final EIS at 1-9, 4-40.

not significantly impact surface water resources, including the Croton, Catskill, and Delaware water supply systems, or groundwater resources, that supply New York City.<sup>215</sup> On October 22, 2015, Algonquin filed a supplement to its implementation plan identifying that it had received all of its stormwater plan approvals. Thus, we find that the final EIS adequately assessed stormwater effects, and that requiring Algonquin to file a stormwater plan would be unnecessary and duplicative.

**b. West Roxbury Lateral Water Crossings**

151. West Roxbury Intervenors state that the Commission erroneously accepted Algonquin's statement that it will be a "faithful steward of the environment" and that the West Roxbury Lateral will not impact water bodies, wetland, or watershed protection areas in Massachusetts.<sup>216</sup> To counter Algonquin's statement, West Roxbury Intervenors state, without more, that the West Roxbury Lateral will cross Mother Brook Reservation and the Charles River Basin.

152. A pipeline crossing a water body does not mean that water bodies, wetlands, or watershed protection areas will be adversely affected. In this case, the final EIS states that the West Roxbury Lateral will not affect any watershed protection areas or wetlands in Massachusetts.<sup>217</sup> While the lateral will cross water bodies, adverse impacts to these areas will be minimized and mitigated to the extent practicable through avoidance and minimization measures.

153. For example, Algonquin must comply with all appropriate federal permits and authorizations, including the Clean Water Act, which protects water resources.<sup>218</sup> Environmental Condition 9 requires Algonquin to file with the Commission documentation showing that Algonquin has received all applicable authorizations required under federal law, or evidence of waiver thereof. Accordingly, the Commission will not authorize Algonquin to start construction until and unless Algonquin has received the applicable authorizations to protect water resources. Algonquin will also implement its Erosion and Sediment Control Plan that includes certain wetland protection and restoration measures. Further, Algonquin must comply with Environmental Conditions 16, 17, 18, and 19 of the March 3 Order that apply to horizontal directional drill (HDD) crossings, vernal pools, and

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<sup>215</sup> See *id.* at ES-4; New York State Department of Environmental Conservation May 15, 2015 Response to Comments at 17.

<sup>216</sup> West Roxbury Intervenors April 2, 2015 Rehearing Request at 21.

<sup>217</sup> See final EIS at 4-29, 4-59.

<sup>218</sup> March 3 Order, 150 FERC ¶ 61,163, at P 73.

wetlands.

154. To ensure Algonquin complies with these measures and conditions, Algonquin will participate in a third-party monitoring program. This program includes an on-site compliance monitor that, at the Commission's direction, inspects Algonquin's construction activities daily and ensures compliance with Algonquin's plans and the March 3 Order certificate conditions. If Algonquin fails to comply, it is subject to the potential assessment of general and civil penalties.<sup>219</sup>

**c. Supplemental EIS for Condition 16**

155. The Commission received several comments on the draft EIS regarding what would happen in the event that the HDD method is unsuccessful for crossing the Hudson River in New York or Still River in Connecticut. In response to these comments, Commission staff proposed an environmental recommendation that would require Algonquin to file with the Commission's Secretary a site-specific plan for an alternative crossing method in the event that the HDD method is unsuccessful. The March 3 Order adopted this recommendation as Environmental Condition 16.<sup>220</sup>

156. Riverkeeper, Coalition, and Town of Cortlandt argue that an alternate crossing method would result in "substantial changes in the proposed action" or "significant new circumstances or information" requiring a supplemental environmental review under NEPA.<sup>221</sup> Because Environmental Condition 16 does not require supplemental

environmental review for an alternative crossing plan, they argue that the Commission violated NEPA.

157. The HDD method has not proven unsuccessful, and Algonquin has not proposed an alternative crossing method. Because there is no alternative crossing plan before the Commission, the Commission cannot determine whether the alternative crossing plan would substantially change the proposed action, or involve new significant circumstances or information. The claim that the Commission must mandate supplemental environmental

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<sup>219</sup> See 15 U.S.C. §§ 717t; 717t-1 (2012).

<sup>220</sup> See March 3 Order, 150 FERC ¶ 61,163, at Environmental Condition 16. Environmental Condition 16 also requires Algonquin to file its alternative crossing method plan with its application to the Corps for a Clean Water Act section 404 permit and to other applicable agencies for a permit to construct.

<sup>221</sup> Riverkeeper April 2, 2015 Rehearing Request at 24-25 (citing 40 C.F.R. § 1502.9(c)(1); *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 374 (1989)).

review is therefore not ripe. In the event that Algonquin files an alternative crossing plan for either the Hudson or Still Rivers, staff will at that time evaluate whether it needs to conduct a supplemental EIS to comply with NEPA.

## **6. Blue Mountain Reservation**

158. The AIM Project will replace pipeline segments (Mile Post (MP) 6.7 to 8.1 and MP 8.4 to 8.5) that pass through the Blue Mountain Reservation, a 1,538 acre county-owned park and biodiversity hub located in Westchester County, New York. Algonquin will install the new pipeline in the same trench of the existing pipeline to be removed using additional temporary work space that extends beyond its existing 75-foot maintenance easement.

159. Mr. Harckham and Coalition argue that the final EIS failed to adequately evaluate the impacts that will occur in the Blue Mountain Reservation. Coalition states that Westchester County's easement proceedings<sup>222</sup> and a court's eminent domain proceedings will be hindered because the final EIS did not adequately consider wetlands, biodiversity, endangered species, historical and tribal resources, and recreation within the Blue Mountain Reservation. Therefore, Coalition asserts that the Commission cannot confer eminent domain powers until it completes a full environmental review. In addition, Coalition argues that the Commission does not support its conclusion that the AIM Project will not substantially alter local wildlife populations in Reynolds Hills, a neighborhood abutting the Blue Mountain Reservation.

160. Coalition cites the report prepared by Eric Kiviat, Ph.D. (Kiviat Report), which, as discussed in the March 3 Order, describes the existing habitat and potential plants and animals of conservation concern within the Blue Mountain Reservation and the Reynolds Hills residential area.<sup>223</sup> Coalition argues that because the Kiviat Report identifies discrepancies regarding impacts to special status species, the Commission should conduct additional studies.

161. Mr. Harckham adds that the final EIS should have provided an adequate inventory of the flora and fauna or wetlands. Mr. Harckham also argues that the final EIS failed to evaluate whether the AIM Project requires the additional temporary workspace that extends beyond Algonquin's existing 75-foot right-of-way.

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<sup>222</sup> Coalition specifically references the requirement in New York State for counties to seek approval from the New York State Legislator to alienate parkland, which we discussed above in paragraph 31.

<sup>223</sup> See March 3 Order, 150 FERC ¶ 61,163, at P 138.

162. As an initial matter, we note that the Commission itself does not confer eminent domain powers. Congress gave the Commission jurisdiction to determine if the construction and operation of proposed pipeline facilities are in the public convenience and necessity. Once the Commission makes that determination, under NGA section 7(h), a certificate holder is authorized by Congress to acquire the necessary land or property to construct the approved facilities by exercising the right of eminent domain if it cannot acquire the easement by an agreement with the landowner.<sup>224</sup>

163. In any event, the final EIS and the March 3 Order adequately evaluated impacts that will occur within the Blue Mountain Reservation.<sup>225</sup> The final EIS explained that overall impacts would be minimized because the pipeline would be installed within the existing pipeline trench. Construction noise, dust, tree clearing, and traffic would temporarily impact the Blue Mountain Reservation during project construction. Visual impacts for recreational and aesthetic users, however, would be largely screened by the surrounding woodlands. Algonquin would inform the public before commencing construction activities. Although long-term impacts associated with tree clearing would occur, they would not be permanent.

164. The final EIS identified the existing wetlands in the drainage area of Dickey Brook near Reynolds Hills and within the Blue Mountain Reservation, disclosed the potential impacts on wetlands, and analyzed mitigation measures identified during project review.<sup>226</sup> The final EIS explained that Algonquin would mitigate unavoidable construction-related impacts on wetlands associated with the AIM Project by implementing the wetland protection and restoration measures contained in its Erosion and Sediment Control Plan.

165. The final EIS also adequately evaluated impacts on wildlife in Blue Mountain Reservation and Reynolds Hills. The final EIS listed common wildlife species associated with the vegetative cover types found within the project area,<sup>227</sup> described migratory bird priority species and associated habitats,<sup>228</sup> and discussed common vegetative species associated with identified cover types.<sup>229</sup> The March 3 Order stated that Algonquin

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<sup>224</sup> 15 U.S.C. § 717f(h) (2012).

<sup>225</sup> See final EIS at 4-160 to 4-161.

<sup>226</sup> See *id.* at 4-61 to 4-74.

<sup>227</sup> See *id.* at Appendix N.

<sup>228</sup> See *id.* at Appendix O.

<sup>229</sup> See *id.* at section 4-75 to 4-86.

consulted with the appropriate jurisdictional agencies to identify special status species that may occur within the project area, including the New York DEC's New York Natural Heritage Program and the U.S. Fish and Wildlife Service (FWS). The March 3 Order also stated that qualified wetland scientists already conducted full wetland delineations for the project area in accordance with the Corps' wetland delineation manuals.<sup>230</sup>

166. A site-specific inventory of the flora and fauna within the Blue Mountain Reservation in addition to the final EIS's analysis is unwarranted. Such inventory would not produce new information that would necessitate a change in our analysis and conclusions. Nor do Dr. Kiviat's observations necessitate additional surveys within the Blue Mountain Reservation.<sup>231</sup> Dr. Kiviat's observations are merely conflicting views. The Supreme Court has noted that "[w]hen specialists express conflicting views an agency must have discretion to rely on the reasonable opinions of its own qualified experts . . . ."<sup>232</sup>

167. We also find that the final EIS adequately evaluated the need for Algonquin's additional temporary workspace in the Blue Mountain Reservation. The final EIS explained that for replacement segments of the AIM Project, Algonquin would need a 100-foot-wide construction right-of-way to safely pass equipment and materials needed to remove the existing pipeline and install the new large-diameter pipeline.<sup>233</sup> The final EIS explained that while the construction right-of-way would generally be reduced in wetlands to 75 feet, certain wetland locations would require additional workspace. Algonquin identified six wetland locations within Blue Mountain Reservation where additional workspace would be needed to store spoil from saturated subsoil and accommodate heavy equipment that would be used to install large diameter pipe.<sup>234</sup> We agree with

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<sup>230</sup> See March 3 Order, 150 FERC ¶ 61,163, at PP 140-42.

<sup>231</sup> See March 3 Order, 150 FERC ¶ 61,163, at P 139.

<sup>232</sup> *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 378 (1989). See also *Inland Empire Pub. Lands Council v. Schultz*, 992 F.2d 977, 981 (9th Cir. 1993) ("We defer to agency expertise on questions of methodology unless the agency has completely failed to address some factor"); *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1336 (9th Cir. 1992) ("although [the petitioner] has demonstrated that some scientists dispute the Service's analyses and conclusions, such a showing is not a sufficient basis for us to conclude that the Service's action was arbitrary and capricious. If it were, agencies could only act upon achieving a degree of certainty that is ultimately illusory").

<sup>233</sup> See final EIS at 2-11.

<sup>234</sup> See at table 4.4.4-1.

Commission staff's determination that Algonquin sufficiently justified the use of additional workspace in those wetland areas.

## **7. Traffic, Noise, and Visual Impacts**

168. West Roxbury Intervenors argue that the Commission inadequately considered traffic, noise, and visual impacts. Without explanation, West Roxbury Intervenors quote sentences from the final EIS that discussed project impacts to land use and safety.

169. We deny rehearing on these issues. The final EIS addressed traffic impacts in sections 4.9.5 and 4.9.6 and Appendix G, Traffic Management Plans, finding that the impacts on traffic during construction along the West Roxbury Lateral would result in localized, unavoidable significant adverse impacts at one intersection.<sup>235</sup> With the implementation of Algonquin's *Updated Traffic Management Assessment and Plans for the West Roxbury Lateral*, however, impacts resulting from in-street construction would be minimized to the extent possible and impacts at all other locations along the West Roxbury Lateral would be reduced to less than significant levels.

170. The final EIS addressed noise impacts, including construction traffic noise, in section 4.11.2 of the final EIS.<sup>236</sup> As West Roxbury Intervenors acknowledge, the final EIS also disclosed that the West Roxbury Meter Station could result in some visual impacts,<sup>237</sup> which the March 3 Order required Algonquin to mitigate.<sup>238</sup>

## **8. Property Values and Homeowners Insurance**

171. Coalition contends that the Commission inadequately supported its conclusion that the AIM Project will not diminish property values or increase the cost of homeowners' insurance. In support, Coalition cites *Constitution Pipeline Co., LLC (Constitution)*<sup>239</sup> where the Commission required Constitution to monitor project impacts on property insurance rates.

172. We affirm the final EIS's assessment of impacts on property values and homeowner insurance. Commission staff found that property values will not be devalued by a pipeline

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<sup>235</sup> See *id.* at 4-185 to 4-193, Appendix G.

<sup>236</sup> See *id.* at 4-245 to 4-263.

<sup>237</sup> See *id.* at 4-173 to 4-175.

<sup>238</sup> See March 3 Order, 150 FERC ¶ 61,163, at Environmental Condition 24.

<sup>239</sup> *Constitution Pipeline Co., LLC*, 149 FERC ¶ 61,199 (2014).



easement as the majority of the project's pipeline segments will replace existing pipeline in the same location, and will not require a new pipeline easement.<sup>240</sup> While the West Roxbury Lateral will require new permanent pipeline easements, the new pipeline will predominantly be located on public property or within streets that have an existing distribution pipeline, and thus, will not require a new pipeline easement on private properties. For any new easements, Algonquin will compensate the landowners for the temporary loss of land use and any damages. In addition, affected landowners who believe that their property values have been negatively impacted can appeal to local tax agencies for reappraisal and potential tax reductions.

173. The final EIS also concluded that it is unlikely that homeowners' insurance rates would be affected by the AIM Project because insurance advisors, consulted on other natural gas pipeline projects reviewed by the Commission, indicated that pipeline infrastructure does not affect homeowner insurance rates.<sup>241</sup> Commission staff appropriately did not recommend that Algonquin monitor homeowner insurance complaints as it did in *Constitution*. In *Constitution* the applicant proposed an entirely greenfield pipeline affecting new landowners, and thus, staff was uncertain on how the project would affect homeowner insurance. In contrast, the majority of the AIM Project is replacement pipeline, and thus landowners' homeowners insurance would have already been affected. While the West Roxbury Lateral is a new pipeline, adjacent landowners' homeowners insurance would also likely not change because the pipeline would primarily be located on public land or within streets, not on private property subject to homeowners insurance, and their property already abuts an existing distribution pipeline.

174. Therefore, we find that the final EIS fully considered the impacts that the AIM Project will have on property values and homeowners insurance.

## **9. Environmental Justice**

175. Coalition argues that the final EIS failed to adequately consider whether the AIM Project would cause disparate health impacts to two environmental justice communities – City of Peekskill, New York, and Town of West Roxbury, Massachusetts. Specifically, Coalition appears to contend that our environmental justice analysis did not account for existing air quality, noise, and traffic impacts affecting the environmental justice communities. Coalition adds that the Commission did not provide meaningful opportunities for these communities to participate in this proceeding.

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<sup>240</sup> See final EIS at 4-193 to 4-194.

<sup>241</sup> See *id.* at 4-194.

176. The final EIS's consideration of environmental justice matters is consistent with NEPA and CEQ regulations. The final EIS evaluated the impacts on environmental justice communities of Peekskill and West Roxbury by analyzing the existing environment and the cumulative impacts of the AIM Project when added to other reasonably foreseeable actions in the geographic scope of the project.<sup>242</sup> Based on the information gathered, the final EIS concluded that the AIM Project would not result in any disproportionately high or adverse environmental and human health impacts on minority or low-income communities, or Indian tribes. The EPA's comments on the draft EIS affirm this finding.<sup>243</sup> Moreover, as we stated in prior cases, the siting of linear facilities between two fixed end points is generally based on environmental and engineering factors with no regard to demographics.<sup>244</sup>

177. With respect to public participation, ample opportunity was provided for meaningful community involvement. All public documents, notices, and meetings were readily available to the public during our review of the AIM Project. Coalition argues that the Commission should have issued notices in Spanish during the scoping and commenting process. Notwithstanding that Coalition does not explain how it was harmed by this, it was unclear what language other than English was dominant given that the AIM Project crosses multiple ethnicities and socioeconomic backgrounds. Further, Algonquin translated several fact sheets on its website into Spanish, simplified Chinese, and Traditional Chinese.

## **10. Air Quality**

178. Several rehearing applicants raise various arguments challenging the final EIS's analysis of air emissions and impacts generally, greenhouse gas emissions, and radon.

### **a. Air Emissions and Impacts**

179. Mr. Harckham argues that the Commission failed to present a baseline analysis of existing emissions and public health, and should have performed a health impact

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<sup>242</sup> See final EIS at 4-200.

<sup>243</sup> In the comments it filed on the draft EIS, EPA states, "The [draft EIS] does a good job of identifying [] impacts and construction mitigation measures to address impacts to Environmental Justice populations along the route. In general, we agree with the conclusion provided in the [draft EIS] that the impacts to low income and minority populations along the route will not be disproportionate." EPA September 29, 2014 Comments on Draft EIS at 7.

<sup>244</sup> See, e.g., *Trunkline Gas Co.*, 94 FERC ¶ 61,381, at P 11 (2001).

assessment for project emissions. Mr. Harckham asserts that the final EIS used conventional dispersion modeling and published emission factors that do not adequately account for sensitive populations, peak impacts, site-specific conditions, and the characteristic of Marcellus shale gas that will be transported.

180. Coalition argues that the final EIS's conclusion that the AIM Project will not adversely affect air quality is unsupported because the Southeast Compressor Station air permit allows Algonquin to emit from the compressor station more than it actually emitted in 2013. In addition, Coalition argues that the final EIS did not evaluate ozone impacts from constructing the West Roxbury Lateral.

181. We disagree. The final EIS identified the existing baseline conditions, including: ambient air quality monitoring data over a three-year period, the attainment status of all project areas for each pollutant (with emphasis on areas currently not in compliance with the National Ambient Air Quality Standards (NAAQS)), and the existing emissions from each compressor station.<sup>245</sup> The final EIS also presented the results of air quality modeling performed for each compressor station. This modeling was based on site-specific terrain and meteorological data for the Stony Point and Southeast Compressor Stations and worst case inputs for all other compressor stations. Further, Commission staff included both short-term (peak) and long-term (average) impacts, and compared the results with the NAAQS.

182. As stated in the March 3 Order, a health impact assessment would be redundant. The EPA developed each NAAQS to protect human health, including that of sensitive populations (e.g., asthmatics, those with cardiovascular disease, children, the elderly, etc.) to account for the latest research on health impacts. EPA has also established multiple standards for different pollutants to address both long-term chronic exposure and short-term exposures (e.g., 1-hour or 24-hour) and standards for hazardous air pollutant (HAP) emissions for specific source categories under the Clean Air Act. The final EIS explained that the AIM Project will result in continued compliance with the NAAQS.<sup>246</sup> We find no basis to duplicate work already performed under EPA rulemakings that were subject to public comment.

183. Moreover, Algonquin also conducted a screening analysis per the guidance in New York DEC's Policy DAR-1. This analysis showed that the model-predicted output concentrations from the two compressor stations located in New York (i.e., Southeast Compressor and Stony Point Compressor Stations) are below New York's health effect-based annual and short-term (1 hour) guideline concentrations that were established to

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<sup>245</sup> See final EIS at 4-217 to 4-234.

<sup>246</sup> See *id.* at 4-200.

protect public health.

184. Coalition's conclusion that the Southeast Compressor Station will emit more pollutants is erroneous. The final EIS compared the maximum potential emissions of the existing compressor stations with the maximum potential emissions from these stations after modifications, and concluded that emissions would decrease for several pollutants at the Southeast and Stony Point Compressor Stations. In comparison, Coalition likens past actual emissions with the maximum potential future emissions, even though they are not directly comparable. The presented project emissions represent continuous operation (8,760 hours per year) of the emission sources at their full capacity.<sup>247</sup> Past actual emissions are based on the actual load conditions and operating hours, which may be notably lower than those used to estimate the potential to emit. The existing and modified facilities are permitted to operate at full capacity and 8,760 hours per year at any point in time. Therefore, we affirm the comparison that the final EIS performed. Further, the final EIS's air quality modeling results demonstrated that operating the project facilities (at their full capacity and 8,760 hours per year) would not violate the NAAQS.<sup>248</sup>

185. Coalition's argument regarding ozone impacts is similarly lacking. The final EIS identified that the West Roxbury Lateral will be located within an ozone nonattainment area.<sup>249</sup> Further, the final EIS discussed stationary equipment operating emissions and construction emissions associated with construction equipment operation, fugitive emissions, and worker commuting for ozone precursor pollutants.<sup>250</sup> Commission staff aggregated these emissions across all project components for the entire project and for each non-attainment or maintenance area to compare with the General Conformity thresholds.<sup>251</sup> Table 4.11.1-5 of the final EIS showed that the construction and operating

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<sup>247</sup> See *id.* at tables 4.11.1-7 to 4.11.1-11.

<sup>248</sup> See *id.* at table 4.11.1-14.

<sup>249</sup> See *id.* at table 4.11.1-3.

<sup>250</sup> See *id.* at tables 4.11.1-5, 4.11.1-6.

<sup>251</sup> General Conformity thresholds are found in section 93.1531(b)(1) of the Environmental Protection Agency's (EPA) regulations. 40 C.F.R. § 93.153(b)(1) (2015). They are minimum thresholds for various criteria pollutants in nonattainment areas for which a General Conformity Determination must be performed. General Conformity Determinations stem from section 176(c) of the Clean Air Act, which requires a federal agency to demonstrate that a proposed action conforms to the applicable State Implementation Plan, a state's plan to attain the NAAQS for nonattainment pollutants. 42 U.S.C. § 7506(c) (2012).

emissions for all project components would not exceed the General Conformity thresholds. The final EIS also explained that operating emissions which are subject to major or minor New Source Review, are already deemed to conform through the state permitting process. Therefore, the final EIS appropriately concluded that air quality impacts, including ozone impacts, from construction would be temporary, localized, and insignificant.<sup>252</sup>

**b. Greenhouse Gas Emissions**

186. Coalition, Mr. Harckham, and West Roxbury Intervenors argue that the Commission did not examine methane emissions from blowdown events or fugitive sources released when operating the AIM Project's pipeline segments. Coalition and West Roxbury Intervenors state that the final EIS should have evaluated methane emissions using the Boston Methane Emissions Study described above.<sup>253</sup> West Roxbury Intervenors also state that the Commission should have addressed methane's carcinogenic effects along the existing distribution pipelines in Boston. To mitigate methane emissions, Coalition states that the Commission should have required Algonquin to monitor any emissions and to comply with any EPA guidelines or requirements concerning methane leaks that are issued during the AIM Project's life.

187. Coalition also contests the final EIS's use of a global warming potential (GWP)<sup>254</sup> of 25 for methane over a 100-year period to analyze greenhouse gas (GHG) emissions associated with the AIM Project. Coalition argues that the GWP of 25 is "outdated" and that the final EIS should have based the methane carbon dioxide equivalent (CO<sub>2</sub>-eq) emissions on GWPs published by the Intergovernmental Panel on Climate Change (IPCC) in its Fifth Assessment Report.<sup>255</sup> IPCC Fifth Assessment Report estimates the value for methane to be 34 over a 100-year period, and 86 over a 20-year period.<sup>256</sup>

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<sup>252</sup> See final EIS at 4-236.

<sup>253</sup> See *supra* P 38.

<sup>254</sup> The global warming potential is a ratio relative to carbon dioxide that is based on the properties of greenhouse gases' ability to absorb solar radiation as well as the residence time within the atmosphere.

<sup>255</sup> Coalition April 2, 2015 Rehearing Request at 41.

<sup>256</sup> IPCC, *Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (2013), <http://www.ipcc.ch/report/ar5/wg1/>.

188. Coalition adds that the final EIS failed to evaluate the environmental impact of GHG emissions released from upstream natural gas production as required by CEQ's 2014 Draft Greenhouse Gas Guidance (2014 Draft GHG Guidance). Coalition argues that greenhouse gases are reasonably foreseeable because the AIM Project will provide a market for gas, and without a market, the gas would otherwise remain in the ground.

189. The final EIS identified the GHG emissions (including methane) from fugitive sources and blowdown events for the compressor stations, meter stations, and pipeline components.<sup>257</sup> Using the information available, the final EIS compared the incremental GHG emissions from the proposed AIM Project facilities to the GHG emissions in the New England region to conclude that emissions were only 0.18 percent of the region. Notwithstanding that the Boston Methane Emissions Study was not yet available when the final EIS was issued, the final EIS's review of emissions in the New England region included GHG emissions in Boston. Even so, the Boston Methane Emissions Study is inapposite as it studied leakage from existing distribution pipelines and, as noted below in our safety discussion, is unrelated to transmission pipelines.

190. It would be inappropriate for us to require Algonquin to monitor and record methane emissions to comply with EPA's future regulations. The EPA, not the Commission, is responsible for identifying applicable facilities and enforcing any existing or future air quality regulations.

191. We also find that the final EIS's use of 25 GWP appropriate. The final EIS explained that we selected a methane GWP of 25 over a 100-year period over other published GWPs for other timeframes because the EPA uses a GWP of 25 for reporting GHG emissions and air permitting requirements. By using the same GWP, Commission staff can compare the project emissions with EPA's regulatory requirements.<sup>258</sup>

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<sup>257</sup> See final EIS at tables 4.11.1-7 to 4.11.1-11, 4.11.1-13. The final EIS also stated that methane, the primary component of a blowdown or fugitive emission, is not considered toxic and is not listed under any regulation or database as carcinogenic. See EPA, Integrated Risk Information System, A-Z List of Substances, <http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showSubstanceList>; Centers for Disease Control and Prevention, Carcinogen List, <http://www.cdc.gov/niosh/topics/cancer/npotocca.html>; American Cancer Society, Known and Probable Human Carcinogens, <http://www.cancer.org/cancer/cancercauses/othercarcinogens/generalinformationaboutcarcinogens/known-and-probable-human-carcinogens>.

<sup>258</sup> See final EIS at 4-221 n. 9. See also final EIS at Volume II, at CO32-3 (explaining that EPA's final rulemaking adopted the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report values over the IPCC's Fifth Assessment (*continued* ...))

192. Coalition's reliance on the 2014 Draft GHG Guidance is also misplaced. Putting aside that the guidance is a draft, and therefore not final, we note that the 2014 Draft GHG Guidance states that agencies should take into account upstream emissions if they have a "reasonably close causal relationship."<sup>259</sup> As we explain above, impacts from future natural gas production are neither causally related to the AIM Project nor reasonably foreseeable. In any event, Commission staff recognized the 2014 Draft GHG Guidance in the final EIS and built the concepts of that guidance into its final EIS to the extent practicable.<sup>260</sup> Commission staff presented the GHG emissions associated with the AIM Project, the potential impacts of GHG emissions, and the mitigation proposed by Algonquin to minimize GHG emissions associated with the AIM Project.<sup>261</sup>

**c. Radon**

193. Coalition challenges the Commission's finding that the risk of radon exposure is insignificant. Coalition argues that radon from transported Marcellus shale gas will be higher than both the average indoor and outdoor radon levels. Coalition relies on a Pennsylvania Department of Environmental Protection (Pennsylvania DEP) report, published the week before the final EIS's issuance, finding that the median radon value at the well was 43.6 picocuries per liter (pCi/L), and the maximum value was 148 pCi/L.

194. As an initial matter, as we state above, we do not know whether the transported natural gas will originate in the Marcellus shale or elsewhere. Even so, we affirm the final EIS's finding that the risk of exposure to radon is not significant.<sup>262</sup>

195. Coalition mischaracterizes the Pennsylvania DEP report to conclude that there are higher levels of radon in the home. Rather than presenting values taken from a natural gas transmission pipeline, Coalition cites measurements taken at the wellhead – i.e., gas that is

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values).

<sup>259</sup> CEQ, *Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts*, at n.4 (December 2014), [https://www.whitehouse.gov/sites/default/files/docs/nepa\\_revised\\_draft\\_ghg\\_guidance\\_sea\\_rchable.pdf](https://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_sea_rchable.pdf) (CEQ 2014 Draft GHG Guidance).

<sup>260</sup> *Id.* at 4 ("Agencies should apply this guidance to the NEPA review of new proposed agency actions moving forward and, to the extent practicable, to build its concept into on-going reviews.")

<sup>261</sup> *See* final EIS at 4-303.

<sup>262</sup> *See id.* at 4-245.

not processed, not in transport, and not subject to influx rate or air exchange. In contrast, the final EIS incorporated reviews of six studies on natural gas radon levels, including one study that took samples from a natural gas transmission pipeline (i.e., downstream from the wells and post processing).

196. Further, the Pennsylvania DEP report calculates indoor concentrations that are similar to those identified in the final EIS. The Pennsylvania DEP report estimated indoor radon levels to equal a median of 0.04 pCi/L and a maximum of 0.13 pCi/L. Similarly, the final EIS estimates in-home concentrations estimated at 0.0042 to 0.0109 pCi/L. Both the Pennsylvania DEP report and final EIS demonstrate that indoor concentrations of radon transported in natural gas is less than average indoor and outdoor concentrations, which are 1.3 pCi/L and 0.4 pCi/L, respectively.<sup>263</sup>

## **11. Safety**

### **a. Indian Point Energy Center**

197. Indian Point Energy Center (Indian Point) is a nuclear powered generating facility owned and operated by Entergy Nuclear Operations, Inc. (Entergy) in the Village of Buchanan, New York. Approximately 2,159 feet of the AIM Project, part of the Stony Point to Yorktown Take-Up and Relay segment, will run through Indian Point's property. The segment will be located 0.5 miles south of Algonquin's existing right-of-way, over 1,600 feet from the power plant structures, and 2,370 feet from the facility's protected security barrier around the main facility sites.

198. U.S. Nuclear Regulatory Commission (NRC) regulations require that nuclear power plant structures, systems, and components important to safety be appropriately protected against dynamic effects resulting from equipment failures and other events and conditions that may occur outside a nuclear power plant, such as the effects of explosions of natural gas carried near the nuclear facility.<sup>264</sup> Entergy provided to the NRC an evaluation on the safety of the pipeline segment near Indian Point in compliance with NRC regulations,<sup>265</sup> and concluded that the AIM Project, as proposed and incorporating certain safety mitigation measures, would not pose increased risks to Indian Point or reduce the margin of safety.<sup>266</sup> The NRC reviewed Entergy's safety analysis and performed its own independent confirmatory analysis. Similarly, the NRC concluded that the AIM Project

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<sup>263</sup> See *id.* at 4-244.

<sup>264</sup> Entergy April 8, 2014 Motion to Intervene at 3.

<sup>265</sup> 10 C.F.R. § 50.59 (2015).

<sup>266</sup> Entergy September 29, 2015 Comments on the draft EIS at 8.



would not adversely impact the safe operation of Indian Point.<sup>267</sup> Based on Entergy's and NRC's analyses, the March 3 Order, and the final EIS, found that the AIM Project will not result in increased safety impacts at Indian Point.<sup>268</sup>

199. Coalition and Mr. Harckham contend that the Commission did not adequately support its conclusion that installing a pipeline segment near Indian Point will not increase safety impacts. Coalition and Mr. Harckham state that the Commission failed to consider expert testimony filed by Mr. Kuprewicz and Paul Blanch on Entergy's and the NRC's analyses. Mr. Kuprewicz and Mr. Blanch's comments challenge Entergy's assumptions and NRC's methodology to evaluate project safety. Coalition also notes that during a hearing held by the U.S. House of Representative's Appropriations Committee on March 24, 2015, representatives questioned NRC Commissioners about their safety review of the AIM Project. Coalition argues that based on the challenges and congressional attention, the Commission should not have relied on NRC's report. Coalition compares the Commission's safety analysis to that in *Washington Gas Light Co. v. FERC* (*Washington Gas Light*).<sup>269</sup> Coalition also cites *Bangor Hydro-Electric Co. v. FERC* (*Bangor*)<sup>270</sup> to argue that the Commission cannot rely on NRC's findings to satisfy the Commission's review.

200. Further, Mr. Harckham contends that the final EIS does not discuss the impact that constructing the pipeline segment may have on the Indian Point Radiological Evacuation Plan or evaluate any alternatives that might promote public safety.

201. We disagree and affirm the final's EIS finding that the AIM Project can safely operate near Indian Point. As an initial matter, we maintain that the NRC is the expert authority and enforcing agency for evaluating and ensuring the safe operation of nuclear facilities, including risks associated with external factors. The experts referenced by intervenors, Mr. Blanch and Mr. Kuprewicz, filed similar petitions with the NRC noting the same concerns raised here to which the NRC prepared extensive formal responses. The NRC continues to conclude that a potential rupture of the proposed pipeline poses no threat to the safe operation of the plant or safe shutdown of the plant and that the analysis it performed was reasonable and acceptable. We find no basis to duplicate or contradict work performed by an agency with special expertise regarding nuclear power plant

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<sup>267</sup> FERC December 3, 2014 Meeting Summary dated October 17, 2014, between FERC and NRC.

<sup>268</sup> See March 3 Order, 150 FERC ¶ 61,163, at P 107; final EIS at 4-276 to 4-278.

<sup>269</sup> *Washington Gas Light Co. v. FERC*, 532 F.3d 928 (D.C. Cir. 2008).

<sup>270</sup> *Bangor Hydro-Elec. Co. v. FERC*, 78 F.3d 659 (D.C. Cir. 1996) (*Bangor*).

facilities.

202. Coalition misconstrues the case *Bangor* as requiring otherwise. At issue in *Bangor* was the Secretary of the Interior's (Secretary) fishway prescription at a hydroelectric project. The court did not impose any obligation on the Commission to independently review the Secretary's prescription. In fact, the *Bangor* court stated that it is the court's role, not the Commission's, to review Interior's fishway prescriptions at Commission licensed hydropower projects: "a reviewing court must determine whether Interior's prescription is 'consistent with law' or 'reasonably related to [its] goal.'"<sup>271</sup>

203. In any event, the Commission is entitled to rely on an agency's expertise.<sup>272</sup> The Commission's capability to assess different types of environmental impacts, while extensive, is not infinite. Accordingly, we routinely rely on the expertise of other agencies to evaluate the environmental or safety impacts of proposed projects, provided we are satisfied as to their competence and the validity of their basic data and analysis. Here, the Commission appropriately relied on the NRC.

204. Further, the safety review in *Washington Gas Light* is inapposite to Commission staff's review here. In *Washington Gas Light*, the Commission dismissed Washington Gas Light's (WGL) safety concern that authorizing the Cove Point Expansion Project would cause WGL's system to leak, finding that there would be no leakage because WGL could repair its system before the expansion project's proposed in-service date. In support, the Commission noted that WGL had fixed leaks on a portion of its system by replacing damaged couplings and reducing operating pressure. The D.C. Circuit, however, found that the fact that WGL fixed a portion of its system does not suggest that WGL could fix its entire system before expansion began. Thus, the D.C. Circuit held that the Commission's finding was not supported by substantial evidence

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<sup>271</sup> *Id.* at 663 (citing *Escondido Mutual Water Co. v. La Jolla et al.*, 466 U.S. 765, 778 (1984)).

<sup>272</sup> See e.g., *EMR Network v. Fed. Comm'n Comm'n*, 391 F.3d 269, 273 (D.C. Cir. 2004) (holding that the FCC did not improperly delegate its duties under NEPA by crediting outside expert standard-setting organizations and other government agencies with a specific expertise).

205. Here, the Commission based its conclusion that the AIM Project can safely operate near Indian Point on substantial evidence.<sup>273</sup> Entergy and NRC performed safety evaluations and concluded that the AIM Project poses no increased risks to Indian Point. NRC's analysis assumed catastrophic pipeline failure, not taking account additional pipeline design measures that Entergy identified and Algonquin committed to use. The NRC's review covered everything inside the outermost fenced area of the facility, including the area with the spent fuel rods. Moreover, we received no comments regarding NRC's report from the U.S. Department of Transportation, which was a cooperating agency to the EIS and has regulatory oversight of pipeline safety once natural gas pipeline facilities are constructed and operating.

206. We also reject Mr. Harckham's assertion that the final EIS should have discussed the impact that constructing the pipeline segment may have on the Indian Point Radiological Evacuation Plan or evaluate any alternatives that might promote public safety. As discussed in the March 3 Order, Mr. Bernard Vaughey raised that issue after Commission staff issued the final EIS. Even so, the March 3 Order explained that emergency vehicle access will be maintained as Algonquin will keep steel plates on site during construction at all open-cut road crossings. Thus, the March 3 Order concluded that project construction will not impact the emergency response and evacuation plans associated with the Indian Point Emergency Planning Zone.<sup>274</sup>

**b. West Roxbury Lateral and West Roxbury Meter Station**

207. The West Roxbury Lateral and West Roxbury Meter Station will be adjacent to the West Roxbury Crushed Stone Quarry (West Roxbury Quarry). We received many comments concerning the impact that blasting from the active quarry will have on the pipeline and meter station. After careful environmental review, the final EIS concluded that the blasting will not damage either the pipeline or meter station.<sup>275</sup> The final EIS based its finding on a report conducted by the third party consultant, GZA GeoEnvironmental, Inc., (GZA Report) and Algonquin's proposed mitigation measures to protect the pipeline from blasting impacts. The GZA Report concluded that the proposed West Roxbury Lateral pipeline will be subject to vibrations well within pipeline design parameters and that the vibrations from blasting at the quarry will not be disruptive or damaging to the meter station. Several rehearing applicants argue that our conclusion is unsupported by substantial evidence.

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<sup>273</sup> See final EIS at 4-276 to 4-278.

<sup>274</sup> See March 3 Order, 150 FERC ¶ 61,163 at PP 146-147.

<sup>275</sup> See final EIS at 4-5 to 4-6.

208. Boston Delegation and West Roxbury Intervenors argue that the Commission's reliance on the GZA Report is arbitrary and capricious. Boston Delegation asserts that the Commission misinterpreted the GZA Report as concluding that the quarry will not damage the meter station or the lateral, when in fact, the GZA Report stated that such damage is "not anticipated."<sup>276</sup> In addition, Boston Delegation and West Roxbury Intervenors state that the GZA Report does not provide any facts or opinions regarding the effect that blasting at the quarry has had on the condition of the existing water lines and gas line. Instead, Boston Delegation states that the GZA Report conceded that the "age, condition, depth, and material of the existing utilities are not known."<sup>277</sup> Boston Delegation adds that the GZA Report failed to analyze the cumulative effect of blasting operations on the pipeline or meter station over multiple years.

209. Further, Boston Delegation and Town of Dedham note that the majority of the West Roxbury Lateral is located within a High Consequence Area (HCA).<sup>278</sup> Town of Dedham states that the Commission inadequately considered the use of more rigorous safety measures in the high consequence areas to minimize risks of an incident, and urges the Commission to require post-construction assessment and monitoring of pipeline operation. West Roxbury Intervenors and Town of Dedham add that the final EIS failed to address the likelihood and consequences of an incident.

210. West Roxbury Intervenors also argue that the final EIS ignored Massachusetts Energy Facility Siting Board's comments regarding safety, including that the proposed operating pressure of the pipeline is too high, that shut-off times are too long, that a ten-mile separation between shut-off valves is too great, that pipeline weld inspections are too infrequent, that operating a pipeline under a street with heavy truck traffic is unsafe, and that surrounding residences would be affected in the event of an incident. West Roxbury Intervenors state that the Commission's dismissal of the Siting Board's concerns ignores the provisions of section 192.317 of the U.S. Department of Transportation's regulations.<sup>279</sup>

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<sup>276</sup> Boston Delegation April 2, 2015 Rehearing Request at 14.

<sup>277</sup> *Id.* at 16.

<sup>278</sup> An HCA is a location that is defined in the pipeline safety regulations as an area where pipeline releases would have greater consequences to the health, safety or environment. *See* 49 C.F.R. § 192.903 (2015).

<sup>279</sup> West Roxbury Intervenors April 2, 2015 Rehearing Request at 14.

211. In addition, West Roxbury Intervenors allege that the Commission dismissed the legal effect of the new Massachusetts law that prohibits any blasting or use of explosive materials within 500 feet of a natural gas pipeline or meter station, and that the Commission failed to address terrorism.

212. The Commission considers pipeline safety as an important and serious matter. Here, Commission staff vigilantly assessed the impacts that the West Roxbury Lateral and West Roxbury Meter Station will have on public safety. The final EIS and the March 3 Order appropriately concluded that the fact that the existing non-jurisdictional gas distribution pipeline has not been damaged corroborates that blasting at the active quarry will not damage the West Roxbury Lateral. The existing distribution pipeline owner is required to comply with the U.S. Department of Transportation's safety regulations for pipeline inspections. Thus, any damage to the existing pipeline would be found through routine inspections. We have no evidence to suggest, nor have the parties demonstrated, that this pipeline is damaged.

213. More important, the GZA Report concluded that vibrations from quarry blasting under the most conservative assumptions are one-tenth of what the proposed pipeline could safely sustain (regardless of the condition of the existing pipeline)<sup>280</sup> and presented research of blast induced vibration on pipelines.<sup>281</sup> We also note that it is not unusual to site a transmission pipeline near a quarry.<sup>282</sup> Therefore, we affirm our finding that quarry blasting would not damage the West Roxbury Lateral or the West Roxbury Meter Station.

214. As the March 3 Order and the final EIS explained, any Commission-regulated pipeline must meet the current pipeline safety standards as set forth in U.S. Department of Transportation regulations.<sup>283</sup> High pressure natural gas pipelines routinely operate in densely populated areas. West Roxbury Intervenors submit no evidence to support their

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<sup>280</sup> Algonquin's March 31, 2014 Analysis of West Roxbury Crushed Stone Operations on Construction and Operation of the West Roxbury Lateral at Attachment A, p. 4.

<sup>281</sup> *Id.* p. 12.

<sup>282</sup> See, e.g., *Alliance Pipeline L.P.*, 84 FERC, ¶ 61,239, at 62,217 (1998) (stating pipeline construction right-of-way will be located 1,000 feet from an active sandstone quarry); *Maritimes and Northeast Pipeline, L.L.C. et al.*, 80 FERC ¶ 61,136, at 61,480 (1997) (stating pipeline will cross one planned quarry).

<sup>283</sup> See final EIS at 4-264.

broad claim that the West Roxbury Lateral's proposed operating pressure of 750 pounds per square inch gauge is too high for a populated area. The U.S. Department of Transportation will require the AIM Project to comply with the applicable safety standards, including more stringent pipeline design and inspection measures required in more densely populated areas (e.g., HCAs), such as a shorter separation between shut-off valves (i.e., 4 miles in class 3 areas and 2.5 miles in class 4 areas) and increased pipeline burial depths under roads and railroads. Further, the U.S. Department of Transportation's regulations require post-construction testing of the pipeline and ongoing operational inspections, including the requirements for weld testing. Thus, U.S. Department of Transportation's regulations already impose post-construction assessment and operational monitoring measures. Accordingly, rehearing applicants' concerns with respect to these types of the safety measures are more appropriately directed to the U.S. Department of Transportation.

215. The final EIS also discussed *transmission* pipeline accident data nationwide and in each state the project will operate within. The data demonstrated the very low likelihood of an incident.<sup>284</sup> The final EIS further explained that, unlike the AIM Project's replacement and new pipelines, older pipelines have a higher frequency of incident because they lack external protective coating and a cathodic protection system, their location may be less well known and less well marked than newer lines, and they are more easily crushed or broken by mechanical equipment or earth movement. Similarly, the final EIS distinguished transmission pipelines from *distribution* pipelines, noting that distribution pipelines represent the majority of pipeline fatalities, are more susceptible to damage because they have smaller diameters, may be plastic, and often have unclear location markings.

216. The final EIS discussed the impact of the project on public safety using the U.S. Department of Transportation's methodology to identify the potential impact radius of an incident. While we recognize that the potential impact radius extends beyond the landowners or abutters affected by project construction, the final EIS identified this distance and the likelihood for an incident to occur. Weighing both consequence and likelihood of an explosion, the final EIS concluded that the West Roxbury Lateral represents a slight increase in risk to the nearby public.<sup>285</sup>

217. The March 3 Order also did not dismiss the legal effect that the new Massachusetts law would have on the West Roxbury Quarry, which prohibits blasting within 500 feet of a natural gas pipeline. As West Roxbury Intervenors acknowledge, the March 3 Order explained that because there is already an existing natural gas distribution pipeline located

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<sup>284</sup> See *id.* at 4-272 to 4-281.

<sup>285</sup> See *id.* at 4-281.

between the quarry and the proposed route, the new Massachusetts law would apply to the quarry even without the construction of the West Roxbury Lateral.<sup>286</sup>

218. In addition, the final EIS adequately addressed terrorism concerns in section 4.12.4.<sup>287</sup> The final EIS concluded that the likelihood of terrorism is unpredictable and the continuing need to construct facilities to support future natural gas pipeline infrastructure is not diminished from the threat of any such future acts. The final EIS also discussed Algonquin's collaboration with the U.S. Department of Homeland Security's Transportation Security Administration - Pipeline Security Division.

## **12. Delegated Review**

219. Coalition maintains that the final EIS violates NEPA because the final EIS prematurely assumed that Algonquin will comply with not yet issued state air and water quality permits when it concluded that most of the AIM Project's adverse air quality and wetland impacts would be reduced to less-than-significant levels.<sup>288</sup> Coalition argues the Commission's assumption was an unlawful delegation of NEPA responsibilities to state agencies. In support, Coalition cites *State of Idaho By and Through Idaho Public Utilities Commission v. Interstate Commerce Commission (Idaho Public)*.<sup>289</sup>

220. Coalition's argument is supported by neither law nor fact. In *Idaho Public*, the court found that the Interstate Commerce Commission violated NEPA when it declined to prepare an EIS for a project proposal, opting to require the regulated party to consult with other federal and state agencies. Here, Commission staff prepared an EIS, which evaluated air quality and wetland impacts, among other things.

221. Coalition appears to argue that the Commission delegated to New York DEC its NEPA review of air emissions from the new meter station and upgrades to existing meter stations in New York. Coalition is mistaken. The draft and final EIS identified the proposed capacity rating of the new heaters for the meter stations and the associated

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<sup>286</sup> March 3 Order, 150 FERC ¶ 61,163 at P 66.

<sup>287</sup> See final EIS at 4-281- to 4-282.

<sup>288</sup> In its rehearing request, Coalition states the final EIS's conclusion is a finding of no significant impact. We assume Coalition refers to our conclusion that the project would result in adverse environmental impacts, but that most impacts would be reduced to less-than-significant levels.

<sup>289</sup> *State of Idaho By and Through Idaho Pub. Utils. Comm'n v. Interstate Commerce Comm'n*, 35 F.3d 585 (D.C. Cir. 1994).

operating emissions of the new and modified meter stations.<sup>290</sup> While the draft EIS did request that Algonquin provide an update on air permitting requirements associated with the new and existing meter stations, Algonquin's update did not affect the operation or our environmental review of the meter stations.

222. As for wetlands, the final EIS identified the existing wetlands in the project area, disclosed the potential project impacts on wetlands, analyzed the mitigation measures identified during project review, and responded to public comments on the draft EIS regarding wetland impacts.<sup>291</sup> The final EIS based its conclusions regarding wetland impacts on Algonquin's proposed avoidance and mitigation measures, including those measures in its Erosion and Sediment Control Plan. The final EIS did acknowledge that state agencies may require additional mitigation measures; however, the final EIS did so to explain that such additional permitting measures would further offset any adverse impacts on wetlands, above-and-beyond what was already proposed and analyzed in the final EIS.<sup>292</sup>

### 13. Alternatives

223. Section 102(C)(iii) of NEPA requires an agency to discuss alternatives to the proposed action in an environmental document.<sup>293</sup> All reasonable alternatives must be evaluated, including alternatives not within the lead agency's jurisdiction and no-action alternatives.<sup>294</sup> An agency's environmental document must also include a brief statement of the purpose and need of the proposed action.<sup>295</sup> Agencies use the purpose and need statement to define the objectives of a proposed action and then to identify and consider legitimate alternatives.<sup>296</sup> In determining which alternatives to consider, agencies must

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<sup>290</sup> See draft and final EIS at tables 4.11.1-12, 4.11.1-13.

<sup>291</sup> See final EIS at 4-61 to 4-74 and at Volume II, "Response to Comments on the Draft Environmental Impact Statement."

<sup>292</sup> See *id.* at 4-65.

<sup>293</sup> 42 U.S.C. § 4332(C)(iii) (2012). Section 102(E) of NEPA also requires agencies "to study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." *Id.* § 4332(E).

<sup>294</sup> See 40 C.F.R. § 1502.14 (2015).

<sup>295</sup> See 40 C.F.R. § 1502.13 (2015).

<sup>296</sup> See *Col. Env'tl. Coal. v. Dombeck*, 185 F.3d 1162, 1175 (10th Cir. 1999).



adopt a rule of reason.<sup>297</sup> Only feasible alternatives need to be considered.<sup>298</sup> Alternatives that are remote, conjectural, or do not meet the purpose or need of the proposed action may be eliminated so long as the agency briefly discusses the reasons for the elimination.<sup>299</sup>

224. NEPA only requires that appropriate alternatives be considered.<sup>300</sup> NEPA does not mandate any particular alternative.<sup>301</sup> Nor does NEPA require an agency to select the environmentally preferred alternative, or to weigh environmental considerations more heavily than other factors. The Supreme Court stated in *Robertson v. Methow Valley Citizens Council*:

If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by [NEPA] from deciding that other values outweigh the environmental costs.<sup>302</sup>

225. Below, we discuss the rehearing applicants' challenges to the final EIS's alternatives analysis for the AIM Project as a whole and to the West Roxbury Lateral and West Roxbury Meter Station.

**a. Alternatives to the AIM Project as a Whole**

226. Mr. Harckham asserts that the final EIS did not support the rejection of renewable

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<sup>297</sup> See *Nat. Res. Def. Council, Inc. v. Morton*, 458 F.2d 827, 834, 837 (D.C. Cir. 1972).

<sup>298</sup> CEQ, *Guidance Regarding NEPA Regulations*, at 9 (1983), [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-GuidanceRegulations.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-GuidanceRegulations.pdf). See also CEQ, *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations* at 4 (1981), <http://energy.gov/nepa/downloads/forty-most-asked-questions-concerning-ceqs-national-environmental-policy-act> ("Reasonable alternatives include those that are *practical* or *feasible* from the technical and economic standpoint and using common sense.").

<sup>299</sup> See 40 C.F.R. § 1502.14(a) (2015).

<sup>300</sup> 42 U.S.C. § 4332(2)(E) (2012).

<sup>301</sup> See *Limerick Ecology Action, Inc. v. Nuclear Regulatory Comm'n*, 869 F.2d 719, 730 n. 9 (3d Cir. 1989) (stating NEPA imposes procedural requirements, not substantive outcomes).

<sup>302</sup> 490 U.S. 332, 350 (1989).

energy alternatives, pointing out that the final EIS dismissed renewable energy alternatives based on power generation even though the AIM Project will not supply electric generators. Mr. Harckham also contends that the final EIS did not thoroughly examine certain alternatives, including energy conservation, Kinder Morgan's Northeast Energy Direct Project,<sup>303</sup> gas exchanges among transmission providers, LNG storage, or LNG import facilities. Mr. Harckham argues that the Commission narrowly defined the project's purpose to reject these alternatives. In addition, Town of Dedham argues that the Commission should have evaluated the Atlantic Bridge and Access Northeast Projects as system alternatives.<sup>304</sup>

227. We disagree. Commission staff did not narrowly define the purpose and need for the project so as to preclude consideration of other alternatives. While an agency may not narrowly define the proposed action's purpose and need, the alternative discussion need not be exhaustive.<sup>305</sup> When the purpose of the project is to accomplish one thing, "it makes no sense to consider the alternative ways to which another thing might be achieved."<sup>306</sup>

228. Here, the final EIS stated that the project purposes are to deliver up to 342,000 Dth per day of natural gas transportation to the Connecticut, Rhode Island, and Massachusetts markets; to eliminate capacity constraints on existing pipeline systems in New York State and southern New England; and to provide access to growing gas supply areas in the Northeast region to increase competition and reduce volatility in natural gas pricing in southern New England. The final EIS set forth the criteria that staff employed to evaluate potential alternatives to the proposed project: whether the alternatives were technically and economically feasible, whether the alternatives offered significant environmental advantage over the proposed project or segments of it, and whether the alternatives met project objectives. The final EIS identified and evaluated alternatives to the project, including the no-action alternative, energy alternatives, system alternatives, and alternative

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<sup>303</sup> Commission staff is considering the Northeast Energy Direct Project in Docket No. CP16-21-000.

<sup>304</sup> It is unclear whether Town of Dedham argues that the Commission should have considered the Atlantic Bridge Project and the Access Northeast Project as alternatives or that the Commission improperly segmented them from staff's environmental review of the AIM Project. To the extent that Town of Dedham is arguing segmentation, we address improper segmentation above in paragraphs 46-86.

<sup>305</sup> See *State of N.C. v. FPC*, 533 F.2d 702, 707 (D.C. Cir. 1976).

<sup>306</sup> *City of Angoon et al. v. Hodel*, 803 F.2d 1016, 1021 (9th Cir. 1986).

sites and pipeline routes.<sup>307</sup>

229. The final EIS rejected renewable energy alternatives<sup>308</sup> based on their inability to meet the project purposes and objectives. As stated in the final EIS, renewable energy is not completely interchangeable with natural gas and could not provide additional natural gas supplies for direct residential and commercial uses, including heating and cooking, without extensive conversion of existing systems to electric-based systems. In addition, the final EIS considered Kinder Morgan's Northeast Energy Direct Project as a system alternative but found that project's scope would need to be significantly increased to reach the delivery points of the AIM Project Shippers, which would not provide a significant environmental advantage over the AIM Project.<sup>309</sup>

230. The final EIS did not consider LNG storage, import facilities, or gas exchanges as system alternatives to the AIM Project because they were not reasonable alternatives. In order to access supplies at LNG import and storage facilities, Project Shippers would have to transport the regasified LNG by pipeline. Algonquin's system has capacity restraints in this region, and as a result, additional facilities would still be necessary to transport gas to and from LNG import and storage alternatives. Similarly, gas exchanges among transmission providers would require the AIM Project to deliver the gas to the Project Shippers' city gates. Other than Algonquin's system, no other pipeline system serves the Project Shippers' delivery points.

231. The final EIS also appropriately did not evaluate Algonquin's Atlantic Bridge and Access Northeast Projects as system alternatives. In order to accommodate the additional capacity and deliveries for the AIM Project, the Atlantic Bridge and Access Northeast Projects would need to include the AIM Project facilities. Therefore, those projects would not provide significant environmental advantage over the AIM Project and are not reasonable alternatives.

**b. Alternatives to West Roxbury Lateral and West Roxbury Meter Station**

232. The final EIS evaluated three alternatives to the West Roxbury Lateral, including the West Roxbury Lateral Alternative Route and the West Roxbury Lateral South End Alternative; both of which would not run adjacent to the West Roxbury Crushed Stony Quarry. In addition, the final EIS evaluated one alternative to the West Roxbury Meter

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<sup>307</sup> See final EIS at 3-12.

<sup>308</sup> See *id.* at 3-4 to 3-9.

<sup>309</sup> See *id.* at 3-12.

Station, which would be located on residential land that would not abut the quarry.<sup>310</sup>

233. Boston Delegation and Town of Dedham challenge the final EIS's alternatives analysis for the West Roxbury Lateral and West Roxbury Meter Station, arguing that it was arbitrary and capricious and unsupported by substantial evidence. They assert that the Commission must choose a different pipeline lateral route and meter station site because of the proximity of the project facilities to the West Roxbury Crushed Stone Quarry.

234. Town of Dedham argues that the final EIS failed to evaluate alternatives to the West Roxbury Lateral located outside of West Roxbury. Town of Dedham states that because Algonquin's system can connect with Boston Gas Company's (Boston Gas) system elsewhere, Commission should have evaluated other lateral route alternatives to the West Roxbury Lateral in the Greater Boston Area. Instead, Town of Dedham alleges, Commission staff limited the alternatives reviewed based on the contractual obligation between Boston Gas and Algonquin, rather than NEPA requirements.

235. In addition, Town of Dedham and Boston Delegation argue that the final EIS arbitrarily rejected the alternatives to the West Roxbury Lateral and West Roxbury Meter Station. Town of Dedham argues it was inappropriate to dismiss the West Roxbury Lateral South End Alternative based on a Massachusetts Department of Transportation (MassDOT) policy. Because Commission approval preempts both state and municipal regulations, Town of Dedham argues that Commission staff cannot find that overriding a municipality's preferences on where to locate a pipeline is more feasible than setting aside a state agency policy.

236. Boston Delegation argues that Commission staff arbitrarily relied on the GZA Report to reject the West Roxbury Lateral Alternative Route and the alternative meter station site. Boston Delegation also challenges the final EIS's finding that the alternative meter site is technically infeasible and not environmentally preferable because its location would require Algonquin to purchase and demolish an existing residence and the site has potential traffic impacts. Boston Delegation argues that Algonquin can afford to purchase the house and that traffic impacts should not be a factor because the proposed West Roxbury Lateral route will also impact traffic.

237. We disagree and affirm the final EIS's alternatives analysis. Town of Dedham requests that we evaluate other alternative sites to interconnect Algonquin's and Boston Gas's systems in the Greater Boston Area, but does not identify any locations where the systems could be interconnected. As the D.C. Circuit stated in *Minisink*, "[the Commission's obligation to consider alternatives in Section 7 proceedings is not boundless . . . [the Commission] need not 'undertake exhausting inquiries, probing for every possible

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<sup>310</sup> See final EIS at 3-25 to 3-29, 3-34 to 3-35, 3-55.

alternative, if no viable alternatives have been suggested by the parties, or suggest themselves to the agency.’”<sup>311</sup>

238. The final EIS found that neither the West Roxbury Lateral Alternative Route nor the West Roxbury Lateral South End Alternative were preferable or had an environmental advantage over the proposed West Roxbury Lateral route.<sup>312</sup> The final EIS found that the West Roxbury Lateral Alternative Route would cross through the backyards of houses (requiring long-term easements on homeowners’ property), impact residential streets, and disrupt the surrounding neighborhoods, including requiring the complete closure of streets within these areas. In comparison, although the proposed route would pass near more residences, the final EIS explained that the proposed route would primarily be constructed along and within more roadways and in parking lots of commercial and industrial properties (not requiring homeowner easements). Although some impacts would be lessened by use of the West Roxbury Lateral Alternative Route, there is not a significant environmental advantage to recommending it over the proposed route.

239. Similarly, the West Roxbury Lateral South End Alternative would not provide a significant environmental advantage over the proposed route. The West Roxbury Lateral South End Alternative would run adjacently parallel to Interstate 95. Such location would result in limited construction workspace, would require the temporary removal of existing sound abatement walls along the highway and cause highway traffic noise impacts until the wall could be replaced, would require the permanent removal of trees that protect residences from highway traffic noise, and would result in additional traffic impacts on a local shopping area.

240. Moreover, the location of the West Roxbury Lateral South End Alternative would conflict with MassDOT’s “Policy on the Accommodation of Utilities Longitudinally, Along Controlled-Access Highways.” This MassDOT policy precludes placing utility infrastructure parallel to the interstate highway system absent extenuating circumstances. Commission staff considered requesting a waiver of MassDOT policy to reduce local impacts in West Roxbury; however, Commission staff ultimately concluded that the AIM Project, including the West Roxbury Lateral, as proposed with Algonquin’s mitigation measures, would not result in significant impacts, and therefore, requesting a waiver was unwarranted. Hence, we find no basis to preempt a state’s policy to satisfy a municipality’s preference.

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<sup>311</sup> *Minisink Residents for Environmental Preservation & Safety v. FERC*, 762 F.3d 97, 111 (D.C. Cir. 2014) (citing *Citizens for Allegan Cnty.*, 414 F.2d 1125, 1133 (D.C. Cir. 1969)).

<sup>312</sup> See final EIS at 3-25 to 3-29.

241. The final EIS also found that the alternative to the West Roxbury Meter Station would not be preferable to or provide a significant environmental advantage over Algonquin's proposed meter station site.<sup>313</sup> The final EIS evaluated the alternative meter site and found that the alternative site would require the purchase and demolition of an existing residence, which is not currently for sale, to provide sufficient workspace for the meter station. Because the availability of that site is unknown, coupled with the Commission's policy to encourage applicants to negotiate for the use of a right-of-way or workspace over the use of eminent domain, the final EIS concluded that the alternative meter site was less feasible than the proposed site. Further, construction at the alternative site would cause greater traffic impacts than the proposed site because the alternative site had limited space available for construction.

242. Commission staff also found no basis for selecting an alternative route or site to alleviate concerns about locating the project facilities near an active quarry, which the GZA Report demonstrates are unwarranted. As noted above in our safety discussion, Commission staff appropriately relied on the GZA Report to support its conclusion that the West Roxbury Lateral and the West Roxbury Meter Station could safely operate near the quarry.

243. Accordingly, we find that the final EIS's alternatives analysis fulfilled NEPA requirements, and deny rehearing on these matters.

**G. Conformity with the Natural Gas Act**

244. Mr. Harckham contends that the March 3 Order erred in its determination of whether the AIM Project should be authorized under the Natural Gas Act, as implemented through the Certificate Policy Statement, because the order failed to appropriately balance public benefits against potential adverse environmental impacts. Mr. Harckham repeats his contentions that the March 3 Order failed to adequately consider the AIM Project's impacts on water quality, forest habitats, species, and air quality; the indirect and cumulative impacts of upstream production; and the AIM Project's contribution to climate change. Similarly, Boston Delegation and West Roxbury Intervenors argue that the Commission violated the Certificate Policy Statement by concluding that Algonquin minimized adverse safety impacts on landowners and surrounding communities.

245. We disagree and affirm our finding in the March 3 Order that authorizing the AIM Project is in the public convenience and necessity. Under the Certificate Policy Statement the Commission evaluates a proposed project by balancing the evidence of public benefits to be achieved against any residual adverse effects on the economic interests of: (1) the applicant's existing customers; (2) existing pipelines in the market and their captive

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<sup>313</sup> See *id.* at 3-55.

customers; and (3) landowners and communities affected by the construction (i.e., eminent domain impacts). The Certificate Policy Statement's balancing of adverse impacts and public benefits is not an environmental analysis process, but rather an economic test that we undertake before our environmental analysis.<sup>314</sup>

246. The March 3 Order concluded that the AIM Project will have no adverse economic impacts on either Algonquin's existing customers or on other existing pipelines or their captive customers.<sup>315</sup> Further, the Commission found that the AIM Project will minimize the impacts to affected landowners as the majority of all construction activities and project facilities will be located on Algonquin's existing right-of-way and fenced facilities.<sup>316</sup> The March 3 Order also noted that Algonquin executed binding precedent agreements with its Project Shippers for firm service utilizing all of the project's design capacity.<sup>317</sup> Based on the strong showing of public benefits (i.e., the creation of capacity to meet the firm contractual commitment of the project shipper) and the minimal impacts the project may have on the economic interests of adjacent landowners, the Commission found and continues to find that, the AIM Project is required by the public convenience and necessity pursuant to the criteria set forth in the Certificate Policy Statement, subject to the order's environmental discussion and conditions.<sup>318</sup>

247. The March 3 Order then turned to analyze the project's environmental impacts to complete the NGA analysis and comply with NEPA. The Commission fully addressed the environmental and safety issues raised by the rehearing applicants in the final EIS, the March 3 Order, and this order. As discussed above, the Commission need not analyze the impacts of upstream production for the purposes of our environmental analysis for this project, and the Commission substantially supported its final EIS's conclusion that, although the project would result in adverse environmental impacts, most impacts would be reduced to less-than-significant levels.

248. Thus, we affirm the March 3 Order's application of the Certificate Policy Statement.

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<sup>314</sup> See *National Fuel Gas Supply Corp.*, 139 FERC ¶ 61,037, at P 12 (2012).

<sup>315</sup> March 3 Order, 150 FERC ¶ 61,163 at P 20.

<sup>316</sup> *Id.* P 21.

<sup>317</sup> *Id.* P 23.

<sup>318</sup> *Id.* P 26.

## **H. Items Raised for the First Time on Rehearing**

249. Rehearing applicants raise three arguments for the first time on rehearing: (i) that the Commission violated the NGA by segmenting the AIM Project and the Atlantic Bridge Project, (ii) that the Commission's *Upland Erosion Control, Revegetation, and Maintenance Plan (Plan)* and *Wetland and Waterbody Construction and Mitigation Procedures (Procedures)* inadequately mitigate project impacts, and (iii) that the Final Survey Results should have been made publicly available.

250. As a rule, we reject novel arguments raised on rehearing, unless we find that the argument could not have been previously presented, e.g., claims based on information that only recently became available or concerns prompted by a change in material circumstances.<sup>319</sup> We do so because our regulations preclude other parties from responding to a request for rehearing<sup>320</sup> and "such behavior is disruptive to the administrative process because it has the effect of moving the target for parties seeking a final administrative decision."<sup>321</sup>

251. Rehearing applicants do not explain why they or any of their joining members could not have raised these new arguments earlier, and we find no reason that these arguments could not have been raised before we issued our March 3 Order. Therefore, we will not entertain these new arguments. In any event, as discussed below, we would nevertheless deny rehearing of the new arguments.

### **1. Economic Segmentation**

252. Several rehearing applicants argue that the Commission violated section 7 of the NGA and the Certificate Policy Statement by excluding the Atlantic Bridge Project from the Commission's analysis of the AIM Project. Coalition argues that such exclusion ignores that developing both projects may be more costly, less efficient, or duplicative, and therefore inconsistent with the public convenience and necessity. West Roxbury Intervenors state that without evaluating the project on national scale, the Commission

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<sup>319</sup> Rule 713(c)(3) of our Rules of Practice and Procedure states that any request for rehearing must "[s]et forth the matters relied upon by the party requesting rehearing, if rehearing is sought based on matters not available for consideration by the Commission at the time of the final decision or final order." 18 C.F.R. § 385.713(c)(3) (2015).

<sup>320</sup> *Id.* (d).

<sup>321</sup> *Texas Eastern Transmission, LP et al.*, 141 FERC ¶ 61,043, at 19 (2012) (citing *Westar Energy, Inc.*, 134 FERC ¶ 61,176 (2011)), *appeal dismissed*, *NO Gas Pipeline v. FERC*, 756 F.3d 764 (D.C. Cir. 2014).



cannot find that the AIM Project is required by the public convenience and necessity. In support, Coalition and West Roxbury Intervenors cite *City of Pittsburgh v. FPC (City of Pittsburgh)*.<sup>322</sup>

253. The rehearing applicants are mistaken. There is no inconsistency between the Commission's actions in this proceeding and *City of Pittsburgh*. At issue in *City of Pittsburgh* was the Commission's order authorizing Texas Eastern Transmission Corporation (Texas Eastern) to abandon service on one of its pipelines and to transfer the load to another pipeline that did not operate at full capacity. Protesters contested the Commission's order, arguing that because the pipeline would be abandoned, the pipeline would not be available for future expansion and, as a result, Texas Eastern would have to install more capacity and increase rates. The *City of Pittsburgh* court set aside the order largely on what it deemed the Commission's failure to consider the impact of future expansion.

254. Here, Algonquin does not propose to abandon existing capacity that would have to be replaced to accommodate future expansion. Instead, the AIM Project and the Atlantic Bridge Project are expansion projects. The AIM Project costs will be recovered through negotiated rates paid by Project Shippers and will not be rolled-into Algonquin's existing shippers' rates. Therefore, existing customers will not subsidize service on the AIM Project. The AIM Project and Atlantic Bridge Project are also not duplicative. The Project Shippers have subscribed to full capacity made available on the AIM Project and the seven project shippers of the Atlantic Bridge Project have subscribed to its additional expansion capacity. The Certificate Policy Statement found that long-term transportation service agreements constitute strong evidence of project need.

255. Regarding West Roxbury Intervenors' request to evaluate the project on a national scale, as we noted above, section 7(e) of the NGA requires the Commission to assess each project individually.<sup>323</sup> Therefore, the March 3 Order did not violate section 7 or the Certificate Policy Statement by evaluating the economic impacts of the AIM Project on its own.

## **2. Mitigation Measures**

256. Allegheny argues that the Commission has not provided substantial evidence that the Commission's *Plan* and *Procedures* are sufficient to avoid and minimize any potential impacts. In support, Allegheny cites a settlement agreement between the Pennsylvania Department of Environmental Protection and Tennessee Gas Pipeline Company, L.L.C. for

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<sup>322</sup> 237 F.2d 741 (D.C. Cir. 1955).

<sup>323</sup> See our discussion in paragraphs 40 of this order.

multiple violations of state law, including the discharge of sediment pollution, during the construction of the 300 Line Project in 2011 and 2012.

257. We disagree. Before constructing the take-up and relay portions of the project, Algonquin must file a revised project-specific Erosion and Sediment Control Plan, which incorporated the Commission's *Plan* and *Procedures*.<sup>324</sup> The Commission's *Plan* and *Procedures*, both updated in 2013, are based on Commission staff's experience inspecting pipeline construction and include industry best management practices designed to minimize the extent and duration of disturbance on wetlands and waterbodies during the construction of Commission-jurisdictional natural gas projects. During the 2013 update, Commission staff revised the *Plan* and *Procedures* with input from the federal, state, and local agencies; environmental consultants; inspectors and construction contractors; the natural gas industry; and nongovernmental organizations and other interested parties with special expertise on natural gas facility construction projects. The construction and mitigation measures in the *Plan* and *Procedures* are proven to protect wetlands and waterbodies. One isolated project of thousands of projects and 200,000 miles of transmission pipeline under our jurisdiction fails to indicate widespread ineffectiveness of the *Plan* and *Procedures*.

258. In addition, Algonquin will implement an environmental inspection program, which will consist of trained individuals to ensure that Algonquin implements the appropriate mitigation measures and complies with federal, state, and local permit stipulations. Algonquin has also agreed to fund a third-party environmental monitoring program that will include full-time personnel working under our direction.<sup>325</sup> The third-party personnel will monitor project construction and conduct regular field inspections. Given the Commission's extensive experience with the *Plan* and *Procedures*, the consultation conducted to revise the *Plan* and *Procedures*, and the monitoring programs, we find that Commission staff provided substantial evidence indicating that the *Plan* and *Procedures* sufficiently mitigate project impacts.

259. Moreover, the Commission takes matters of non-compliance seriously. We impose penalties for non-compliance on a case-by-case basis, which are tailored to the specific facts presented, e.g., degree of non-compliance and resulting impacts. If Algonquin fails to comply with the conditions of the order, it will be subject to potential general and civil penalties.<sup>326</sup>

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<sup>324</sup> See March 3 Order, 150 FERC ¶ 61,163, at Environmental Condition 19.

<sup>325</sup> See final EIS at 2-40 to 2-41.

<sup>326</sup> See 15 U.S.C. §§ 717t; 717t-1 (2012).

### **3. Final Survey Reports**

260. Coalition argues that because Algonquin filed its Final Survey Reports for federally-listed species as privileged, Coalition could not meaningfully evaluate the Commission's analysis of endangered species within Blue Mountain Reservation and Reynolds Hills in Westchester County, New York. Persons interested in viewing privileged information could have requested them pursuant to section 388.112 of the Commission's regulations.<sup>327</sup>

### **IV. Request for Stay**

261. On rehearing, Coalition urges the Commission to stay the certificate or Algonquin's ability to commence tree removal or ground-breaking activity or invoke eminent domain until a resolution has been reached on rehearing and judicial review. The Town of Cortlandt on rehearing also states that the Commission should stay the commencement of the AIM Project, but provides no explanation for its assertion. In its April 17, 2015, Answer, Algonquin filed comments opposing Coalition's and Town of Cortlandt's requests for stay.

262. On June 23, 2015, U.S. Congressman Stephen Lynch, Massachusetts State Senator Michael F. Rush, Massachusetts State Representative Edward F. Copping, and Boston City Councilor Matt O'Malley (collectively, Local Officials) requested an emergency stay of construction of the West Roxbury Lateral pending rehearing.<sup>328</sup> On July 7, 2015, Algonquin filed an answer opposing Local Officials' request for stay. On July 9, 2015, Project Shippers Yankee Gas Services, Inc. and NSTAR Gas Company filed an answer supporting Algonquin's July 7 Answer and opposing Local Officials' request for stay.

263. Coalition argues that a stay of the order is necessary to prevent irreparable injury to landowners from Algonquin's acquisition of property rights through eminent domain. Coalition states that eminent domain proceedings will cause landowners and municipal governments to incur legal fees to defend against the taking of property for a project that may be vacated on rehearing or modified by yet-to-be-issued water quality certifications. Coalition adds that if property rights are restored to landowners, it is unlikely that the landowners will recover their attorney fees. Coalition also asserts that a stay of the order is necessary to prevent irreparable injury to the environment from construction activities.

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<sup>327</sup> 18 C.F.R. § 388.112 (2015).

<sup>328</sup> On April 23, 2015, New York State Assembly Member Sandy Galef filed comments requesting that the Commission stay any construction, or preliminary set-up for construction, before the New York DEC issues its air and water permits.

Coalition maintains that the construction of the pipeline will cause irreversible environmental impacts, such as the loss of trees, wetland areas, and wildlife habitat.

264. Local Officials argue that a stay of the order is necessary to prevent irreparable injury to landowners from the operation of the West Roxbury Lateral and West Roxbury

Meter Station. Local Officials reiterate the concerns regarding the lateral and meter station operating within a populated area and near an active quarry.

265. The Commission's standard for granting a stay is whether justice so requires.<sup>329</sup> The most important element is a showing that the movant will be irreparably injured without a stay. To ensure definiteness and finality in our proceedings, our general policy is to refrain from granting a stay.<sup>330</sup> For the reasons discussed below, we will deny Coalition's request.

266. Coalition has not shown that absent a stay there will be irreparable injury to them as a result of the incurrence of potentially unnecessary costs during eminent domain proceedings. In *Wisconsin Gas Co. v. FERC*,<sup>331</sup> the court developed several principles to determine if the requirement of irreparable harm has been met for a judicial stay:

First, the injury must be both certain and great; it must be actual and not theoretical. Injunctive relief “will not be granted against something merely feared as liable to occur at some indefinite time.” It is also well settled that economic loss does not, in and of itself, constitute irreparable harm . . . . Implicit in each of these principles is the further requirement that the movant substantiate the claim that irreparable injury is “likely” to occur. Bare allegations of what is likely to occur are of no value since the court must decide whether the harm will in fact occur.<sup>332</sup>

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<sup>329</sup> Administrative Procedure Act, 5 U.S.C. § 705 (2012); *Duke Energy Carolinas, LLC*, 124 FERC ¶ 61,254, at P 8 (2008). Under this standard, the Commission generally considers whether the moving party will suffer irreparable injury without a stay, whether issuance of a stay will substantially harm other parties, and whether a stay is in the public interest. *Pub. Util. Dist. No. 1 of Pend Oreille County*, 113 FERC ¶ 61,166, at P 6 (2005).

<sup>330</sup> See, e.g., *Sea Robin Pipeline Co.*, 92 FERC ¶61,217, at 61,710 (2000).

<sup>331</sup> 758 F.2d 669 (D.C. Cir. 1985).

<sup>332</sup> *Id.* at 674.

267. Coalition has not met these principles of showing irreparable harm. We do not vacate the AIM Project here nor has any issued water quality certification modified the pipeline route. Thus, any *unnecessary* legal costs which might be incurred by landowners that may have their land restored are speculative at best. Moreover, regardless of the fact that Algonquin may have commenced eminent domain proceedings, it is still possible for individual landowners to work with Algonquin to accommodate some of their needs. Further, any economic loss, by itself, is not sufficient to constitute irreparable harm.

268. Coalition also has not shown that absent a stay there will be irreparable injury to the environment. The Commission determined in the March 3 Order, after a thorough environmental review, that if the proposed AIM Project facilities are constructed and operated in accordance with the recommended and proposed environmental mitigation measures, it would constitute an environmentally acceptable action.<sup>333</sup> As detailed above, the Commission also rejects Coalition's rehearing arguments that there will be irreparable injury involving the loss of wetlands and wildlife habitat.

269. Similarly, Local Officials have also not shown that absent a stay there will be irreparable injury to their constituents' safety. The Commission determined in the March 3 Order that blasting at the active quarry will not damage the West Roxbury Lateral or West Roxbury Meter Station,<sup>334</sup> and that natural gas transmission lines continue to be a safe, reliable means of transportation.<sup>335</sup> Further, as detailed above, we reject the rehearing arguments that the project cannot operate safely near the active quarry or in a populated area.

270. Both the Commission and the courts have denied stays in circumstances similar to those presented here. For example, in *Midwestern Gas Transmission Company*, the Commission denied a request for stay that was based on claims that construction and eminent domain proceedings would cause irreparable harm to the environment and local landowners.<sup>336</sup> Similarly, in *Transcontinental Gas Pipe Line Corporation*, the Commission found that allegations of environmental harm and pipeline safety did not support grant of a stay.<sup>337</sup> The courts have also denied requests for judicial stay in similar

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<sup>333</sup> March 3 Order, 150 FERC ¶ 61,163, at P 150.

<sup>334</sup> *Id.* PP 61-63.

<sup>335</sup> *Id.* P 105.

<sup>336</sup> 116 FERC ¶ 61,182 (2006).

<sup>337</sup> 98 FERC ¶ 61,086 (2002).

pipeline construction cases.<sup>338</sup>

271. For these reasons, the Commission finds that Coalition and Local Officials have not demonstrated that they will suffer irreparable harm, and thus, their requests for stay are denied.

The Commission orders:

(A) The requests for rehearing of the March 3 Order are denied, and the requests for stay of the March 3 Order are dismissed, as discussed in the body of this order.

(B) Mr. Huston's Request for Rehearing is dismissed for the reasons given in the body of this order.

(C) Late motions to intervene are denied and the late movants' requests for rehearing are dismissed.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

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<sup>338</sup> See, e.g., *Minisink Residents for Env'tl. Pres. and Safety v. FERC*, No. 12-1481, Order Denying Motion for Stay (D.C. Cir. Mar. 5, 2013); *In re Minisink Residents for Env'tl. Pres. and Safety*, No. 12-1390, Order Denying Petition for Stay (D.C. Cir. Oct. 11, 2012); *Defenders of Wildlife v. FERC*, No. 10-1407, Order Denying Motion for Stay (D.C. Cir. Feb. 22, 2011); *Summit Lake Paiute Indian Tribe v. FERC*, No. 10-1389 Order Denying Motion for Stay (D.C. Cir. Jan. 28, 2011). See also *Feighner v. FERC*, No. 13-1016, Order Denying Motion for Stay (D.C. Cir. Feb. 8, 2013); *Del. Riverkeeper Network v. FERC*, No. 13-1015, Order Denying Motion for Stay (D.C. Cir. Feb. 6, 2013); *Coal. for Responsible Growth and Res. Conservation v. FERC*, No. 12-566, Order Denying Motion for Stay (2d. Cir. Feb. 28, 2012).

**Appendix A**  
**Parties Requesting Rehearing**

**Parties Joining the City of Boston Delegation Request for Rehearing**

- United States Congressman Stephen F. Lynch
- Mayor of The City of Boston Martin J. Walsh
- Boston City Councilor Matt O'Malley
- Boston City Councilor Michelle Wu
- Boston City Councilor Michael Flaherty
- Boston City Councilor Ayanna Pressley
- Boston City Councilor Stephen J. Murphy
- Massachusetts State Representative Edward F. Coppinger
- Massachusetts State Senator Michael Rush

**Parties Joining the Coalition Request for Rehearing**

- The Community Watersheds Clean Water Coalition
- Jessica Porter
- Sierra Club Lower Hudson Chapter
- Food & Water Watch
- Stop the Algonquin Pipeline Expansion
- Better Future Project
- Capitalism versus the Climate
- Fossil Free Rhode Island
- Phil Barden
- Eunice Carlas
- Paul Dunn
- Margaret Sheehan
- Paul McIrney
- Marla Rivera
- Jan White
- Mary McMahon
- Robert and Audrey Brait
- Dan McCann
- William and Robin Cullinane
- Linder Sweeney
- Walter Partridge<sup>339</sup>

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<sup>339</sup> We note that the March 3 Order granted late motion to intervene of the  
(continued ...)

- Reynolds Hill, Inc.
- Keep Yorktown Safe New York
- City of Peekskill, New York
- Pramilla Malick
- Rickie Harvey (West Roxbury Saves Energy)

**Parties Joining the West Roxbury Intervenors Request for Rehearing**

- Matthew Butler
- Charles River Spring Valley Neighborhood Association
- Conservation Law Foundation;
- Rickie Harvey
- West Roxbury Saves Energy
- Virginia Hickey
- Mary McMahon
- Alexandra Shumway<sup>340</sup>

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Direct Abutters and Private Citizens of West Roxbury and Dedham (Direct Abutters). Appendix A of the March 3 Order, however, mistakenly did not include Walter Partridge as member of the Direct Abutters as requested in the Direct Abutter's late motion to intervene.

<sup>340</sup> Appendix A of the March 3 Order incorrectly spells Ms. Shumway's last name as "Schumay."